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City of Cambridge.

ANNUAL REPORT

OF

THE SCHOOL COMMITTEE

PREPARED BY THE

SUPERINTENDENT OF SCHOOLS.

1894.



BOSTON:

CASHMAN, O'CONNOR & CO., PRINTERS.

1895.

NOTICE.

Persons having copies of the Cambridge School Reports that they do not care to keep on file will confer a favor by sending them to the office of the Superintendent of Schools, as requests for some one or more of these reports are frequently made by superintendents of schools and librarians of public libraries.

The reports especially desired are for the following years: 1893, 1891, 1890, 1877, 1876, 1875, and all reports previous to the year 1869.

The report for 1892 is not needed, as the supply for that year is ample.

REPORT

OF THE

SCHOOL COMMITTEE FOR 1894.

In compliance with Section 142 of the Rules and Regulations, the Superintendent herewith submits his twentieth annual report, it being for the year ending December 31, 1894.

Population of Cambridge.

1840	8,409	1870	39,634
1850	15,215	1875	47,838
1855	20,473	1880	52,699
1860	26,060	1885	59,658
1865	29,112	1890	70,028

Estimated population, 1894, 84,000.

School Census.

Number of children in the city on the first of May, five years old or more but less than fifteen, as reported by the Truant Officers.

1876	8,218	1886	11,131
1878	8,422	1887	11,216
1879	8,885	1888	11,727
1880	9,390	1889	11,750
1881	9,582	1890	11,971
1882	10,370	1891	12,160
1883	10,490	1892	12,451
1884	10,682	1893	12,644
1885	10,957	1894	12,770

Schools and Classrooms.

Latin School	1	Classrooms in use.....	8
English High School	1	“ “ “	13
Grammar Schools	11	“ “ “	129
Primary Schools	21	“ “ “	112
Kindergartens	8	“ “ “	9
Evening Drawing Schools.....	2	“ “ “	8
Evening High School.....	1	“ “ “	6
Evening Elementary Schools...	4	“ “ “	15
Whole number of Day Schools.....			42
Number of classrooms for Day Schools			271

High School and Grammar School Houses.

Schoolhouses.	Number of Class- rooms.	Estimated Value.	Size of Lots, sq. ft.	Estimated Value.	Total Value.
Latin	8*	\$40,000	37,828	\$15,900	\$55,900
English High	11†	220,000	74,366	18,000	238,000
Allston	12‡	30,000	15,193	4,600	34,600
Corlett	2	3,000	10,000	1,000	4,000
Harvard	16‡	45,000	20,494	12,000	57,000
Morse	14‡	73,000	25,650	7,000	80,000
Peabody	6	27,000	21,813	7,000	34,000
Putnam	13‡	60,000	11,900	8,300	68,300
Shepard	11	30,000	14,755	7,000	37,000
Thorndike	12	30,000	10,027	4,000	34,000
Washington	12‡	25,000	14,951	7,000	32,000
Webster.....	16‡	50,000	25,839	9,000	59,000
Wellington.....	13‡a	42,000	27,673	8,300	50,300
Total	146	\$675,000	310,489	\$109,100	\$784,100

* Also a library, a physical laboratory, and an assembly hall.

† Also five recitation rooms, a library, a physical laboratory, a chemical laboratory, a lecture room, a drawing room, and an assembly hall.

‡ Also an assembly hall.

‡a On the same lot there is another schoolhouse containing four rooms used for primary classes.

Primary School Houses.

Schoolhouses.	Number of Class- rooms.	Estimated Value.	Size of Lots, sq. ft.	Estimated Value.	Total Value.
Agassiz.....	7	\$18,000	19,689	\$6,000	\$24,000
Boardman	8	12,000	10,018	4,000	16,000
Cushing.....	2	3,000	14,787	1,000	4,000
Dana	4	2,000	14,317	4,300	6,300
Dunster....	4	4,000	10,000	2,000	6,000
Felton.....	4	6,000	15,090	4,500	10,500
Gannett	5	12,000	15,434	3,000	15,000
Gore	12	25,000	9,900	4,000	29,000
Holmes.....	4	6,000	11,182	4,500	10,500
Lassell	4	8,000	10,000	2,500	10,500
Lowell	4	7,000	12,033	2,500	9,500
Otis.....	8	12,000	8,270	4,000	16,000
Parker.....	6	19,000	12,329	7,000	26,000
Quincy	2	10,000	8,469	5,000	15,000
Reed	4	4,000	12,000	1,200	5,200
Riverside.....	4	5,000	11,192	3,000	8,000
Sargent.....	4	3,000	9,995	4,000	7,000
Stearns.....	4	3,000	10,050	5,000	8,000
Tarbell.....	4	8,000	19,500	4,000	12,000
Willard ...	12	25,000	20,079	5,000	30,000
Wyman.....	6	6,000	14,347	3,000	9,000
Primary Total	112	\$198,000	268,681	\$79,500	\$277,500
Grammar “	127	415,000	198,295	75,200	490,200
High Schools “	19	260,000	112,194	33,900	293,900
Summary.....	258	\$873,000	579,170	\$188,600	\$1,061,600

Number of teachers in the Day Schools.

[Special teachers are included in the total.]

December.	Latin School.	English High School.	Grammar Schools.	Primary Schools.	Kinder-gartens.	Total.	Normal Graduates.
1889	10	14	118	100	7	251	142
1890	10	15	121	101	11	263	146
1891	10	16	126	104	11	272	161
1892	10	19	131	106	12	284	166
1893	11	19	138	108	13	297	171
1894	12	21	142	114	15	312	191

Attendance at all the Day Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Percent of Attendance.
1885	10,213	8,650	7,915	91.5
1890	11,914	10,089	9,325	92.4
1891	12,468	10,520	9,659	91.8
1892	12,845	10,861	9,959	91.7
1893	13,107	11,045	10,074	91.2
1894	13,254	11,166	10,322	92.4

Attendance at the Latin School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Percent of Attendance.
1889	239	217	207	95.5
1890	224	204	199	96.4
1891	231	213	204	95.7
1892	238	213	203	95.4
1893	269	251	236	94.1
1894	319	303	286	94.3

Attendance at the English High School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1889	397	345	331	96.1
1890	473	409	396	96.7
1891	552	480	464	96.6
1892	624	529	511	96.5
1893	681	569	549	96.5
1894	691	611	594	97.1

Attendance at the Grammar Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1889	5,602	4,864	4,517	92.9
1890	5,668	4,891	4,557	93.2
1891	5,793	5,052	4,701	93.1
1892	5,891	5,175	4,803	92.8
1893	5,981	5,206	4,838	92.9
1894	5,934	5,200	4,876	93.8

Attendance at the Primary Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1889	5,617	4,537	4,086	90.0
1890	5,321	4,403	4,011	91.1
1891	5,499	4,481	4,065	90.7
1892	5,697	4,650	4,203	90.4
1893	5,757	4,666	4,215	90.3
1894	5,815	4,741	4,317	91.1

Attendance at the Kindergartens.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1891	393	294	225	76.7
1892	395	294	239	81.2
1893	419	353	236	66.9
1894	495	311	249	80.3

Number of pupils admitted to the lowest class of the Latin School.

Course, 5 years.

Year.	Boys.	Average Age.	Girls.	Average Age.
1888	36	14 yrs. 7 mos.	24	15 yrs. 0 mos.
1889	37	14 yrs. 10 mos.	34	14 yrs. 7 mos.
1890	39	14 yrs. 6 mos.	22	14 yrs. 9 mos.
1891	32	14 yrs. 5 mos.	35	14 yrs. 3 mos.
1892	52	14 yrs. 7 mos.	32	14 yrs. 7 mos.
1893	63	14 yrs. 6 mos.	41	14 yrs. 1 mo.
1894	51	14 yrs. 8 mos.	44	14 yrs. 4 mos.

Number of pupils graduated from the Latin School.

Course, 5 years.

Year.	Boys.	Average Age.	Girls.	Average Age.
1888	13	18 yrs. 7 mos.	9	19 yrs. 0 mos.
1889	16	18 yrs. 11 mos.	11	19 yrs. 3 mos.
1890	10	18 yrs. 8 mos.	7	19 yrs. 2 mos.
1891	22	18 yrs. 4 mos.	14	18 yrs. 4 mos.
1892	8	17 yrs. 8 mos.	14	18 yrs. 7 mos.
1893	16	19 yrs. 3 mos.	7	19 yrs. 5 mos.
1894	15	18 yrs. 11 mos.	12	19 yrs. 6 mos.

Number of pupils admitted to the lowest class of the English High School and the Manual Training School.

[The Manual Training School is connected with the English High School.]

Year.	English High. Course, 4 yrs.	Average Age.	Manual Train- ing. Course, 3 yrs.	Average Age.
1888	147	15 yrs. 2 mos.	47	15 yrs. 2 mos.
1889	204	15 yrs. 3 mos.	49	15 yrs. 3 mos.
1890	171	15 yrs. 1 mo.	59	15 yrs. 3 mos.
1891	196	15 yrs. 1 mo.	56	15 yrs. 5 mos.
1892	230	15 yrs. 3 mos.	85	15 yrs. 3 mos.
1893	210	15 yrs. 3 mos.	73	15 yrs. 1 mo.
1894	239	15 yrs. 1 mo.	72	15 yrs. 2 mos.

Number of pupils graduated from the English High School and the Manual Training School.

[The Manual Training School is connected with the English High School.]

Year.	English High. Course, 4 yrs.	Average Age.	Manual Train- ing. Course, 3 yrs.	Average Age.
1888	42	18 yrs. 11 mos.	Course changed to 4 years in 1893.	In 1893, 6 of the 32 in 4 years' course. In 1894, 4 of the 26 in 4 years' course.
1889	52	18 yrs. 6 mos.		
1890	37	18 yrs. 7 mos.		
1891	35	18 yrs. 4 mos.	13	17 yrs. 4 mos.
1892	52	18 yrs. 9 mos.	25	18 yrs. $\frac{1}{4}$ mo.
1893	63	18 yrs. 10 mos.	32	18 yrs. $\frac{3}{4}$ mo.
1894	65	18 yrs. 7 mos.	26	17 yrs. 10 mos.

Number of pupils admitted to the lowest class in the Latin School and the English High School since 1887, with the number of graduates.

Admitted to Latin School.	Graduated from Latin School.	Admitted to English High.	Graduated from English High.	Admitted to Manual Train- ing Course.	Graduated from Manual Training Course.
628	186	1,529	395	441	96

Number of pupils graduated from the Grammar and Primary Schools.

Year.	Grammar Schools. Course, 6 yrs.	Average Age.	Primary Schools. Course, 3 yrs.	Average Age.
1891	419	15 yrs. 3 mos.	1,142	10 yrs. 0 mos.
1892	536	15 yrs. $\frac{4}{5}$ mo.	1,146	9 yrs. 10 mos.
1893	487	14 yrs. 11 mos.	1,147	9 yrs. 9 mos.
1894	563	14 yrs. 11 $\frac{1}{2}$ mos.	1,159	9 yrs. 8 $\frac{1}{2}$ mos.

Length of time in completing the Course of Study in the Grammar Schools.

Year.	In 4 years.	In 5 years.	In 6 years.	In 7 years or more.
1892	10 per cent	27 per cent	45 per cent	18 per cent
1893	9 per cent	29 per cent	47 per cent	15 per cent
1894	10 per cent	32 per cent	42 per cent	16 per cent

Length of time in completing the Course of Study in the Primary Schools.

Year.	In 2 years.	In 2 $\frac{1}{2}$ years.	In 3 years.	In 3 $\frac{1}{2}$ years.	In 4 years.	In 4 $\frac{1}{2}$ years or more.
1892	5 per cent		66 per cent		20 per cent	9 per cent
1893	6 per cent	3 per cent	56 per cent	3 per cent	20 per cent	12 per cent
1894	8 per cent	2 per cent	58 per cent	2 per cent	21 per cent	9 per cent

Table showing how many of a class complete the Course of Study.

Schools.	Number that Entered.	Number that Graduated.	Number that Entered.	Number that Graduated.
Latin School	60 (1888)	23 (1893)	71 (1889)	27 (1894)
English High School . . .	253 (1889)	95 (1893)	230 (1890)	91 (1894)
Grammar Schools	1,123 (1887)	487 (1893)	1,222 (1888)	563 (1894)
Primary Schools.	2,082 (1890)	1,147 (1893)	1,969 (1891)	1,159 (1894)

Number of pupils in all the Day Schools at different periods of the year.

Year.	First day of the first week.	First day of the second week.	First week of October.	First week of June.
1889	9,584	10,195	10,455	10,238
1890	9,687	10,360	10,678	10,221
1891	9,580	10,461	11,180	10,863
1892	10,184	10,974	11,360	11,204
1893	10,692	11,354	11,628	11,342
1894	10,889	11,562	11,847	11,532

Number of pupils in the Latin School, December, 1894.

Grade.	Boys.	Girls.	Total.	Per cent.
Fourteenth	20	14	34	.092
Thirteenth	33	30	63	.171
Twelfth	40	28	68	.185
Eleventh ..	48	51	99	.269
Tenth	55	49	104	.283
Total	196	172	368	

Number of pupils in the English High School and in the Manual Training School, December, 1894.

Grade.	Boys.	Girls.	Total.	Per cent.
Thirteenth	20 (1)*	45	65	.092
Twelfth	64 (39)*	71	135	.190
Eleventh	84 (59)*	105	189	.267
Tenth	158 (79)*	162	320	.451
Total	326 (178)*	383	709	

* Manual Training School.

Number of pupils in the Grammar Schools, December, 1894.

Grade.	Boys.	Girls.	Total.	Per cent.
Ninth.....	218	234	452	.082
D	43	43	86	.016
Eighth.....	271	314	585	.106
C.....	74	53	127	.023
Seventh.....	416	430	846	.154
Sixth.....	404	426	830	.151
B	138	130	268	.049
Fifth.....	458	446	904	.165
A	163	171	334	.061
Fourth.....	545	513	1,058	.193
Total.....	2,730	2,760	5,490	

Number of pupils in the Primary Schools, December, 1894.

Grade.	Boys.	Girls.	Total.	Per cent.
Third	702	657	1,359	.273
Second.....	720	684	1,404	.283
First.....	1,173	1,034	2,207	.444
Total.....	2,595	2,375	4,970	

**Number of pupils and teachers in the Kindergartens,
1892, 1893, 1894.**

Year.	Boys.	Girls.	Total.	Number of Teachers.
1892	140	174	314	12
1893	148	178	326	13
1894	180	207	387	15

**Number of pupils belonging to the Evening Drawing Schools with
the average attendance.**

1889.	1890.	1891.	1892.	1893.	1894.
228	166	188	219	242	217
120	106	110	127	142	103

**Number of pupils belonging to the Evening Schools with the
average attendance.**

1889.	1890.	1891.	1892.	1893.	1894.
425	739	1,020	1,013	1,085	1,379
181	298	362	329	419	542

**Number of pupils in the Private Schools in Cambridge including
those in the Parochial Schools.**

1889.	1890.	1891.	1892.	1893.	1894.
2,037	2,050	2,127	2,235	2,376	2,492

Cost of instruction in the Evening Schools.

Year.	Elementary.	High.	Drawing.	Total.
1889	\$1,247 00	\$855 00	\$1,230 00	\$3,332 00
1890	1,513 00	1,260 00	546 00	3,319 00
1891	1,851 50	1,191 25	867 00	3,909 75
1892	1,827 50	1,226 25	1,157 00	4,210 75
1893	2,124 50	1,363 00	1,531 00	5,018 50
1894	2,293 00	1,396 00	1,175 00	4,864 00

Cost of instruction in the Day Schools.

[Salaries of teachers, superintendent, agent, and truant officers.]

Year.	Number of Teachers January 1.	Average Number of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	\$164,818 00	\$23 32
1878	173	7,028	136,491 20	19 42
1880	182	7,175	130,371 75	18 17
1882	200	7,898	137,328 55	17 38
1884	216	8,414	152,290 62	18 09
1885	224	8,650	158,640 13	18 33
1886	233	9,218	165,277 42	17 92
1887	237	9,429	172,135 06	18 25
1888	241	9,756	175,773 80	18 02
1889	251	9,962	180,816 26	18 15
1890	263	10,089	190,558 21	18 89
1891	272	10,520	196,938 70	18 72
1892	284	10,861	207,144 22	19 07
1893	297	11,045	215,593 12	19 52
1894	312	11,166	228,873 48	20 50

Cost of the Day Schools.

[The expenditures for new schoolhouses are not included.]

Year.	Number of Teachers January 1.	Average Number of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	\$200,894 09	\$28 43
1878	173	7,028	162,437 77	23 11
1880	182	7,175	153,967 56	21 45
1882	200	7,898	166,230 52	21 04
1884	216	8,414	203,234 56	24 15
1885	224	8,650	206,806 09	23 90
1886	233	9,218	207,536 46	22 51
1887	237	9,429	222,679 19	23 61
1888	241	9,756	225,408 57	23 10
1889	251	9,962	229,421 31	23 03
1890	263	10,089	241,980 84	23 98
1891	272	10,520	249,491 67	23 71
1892	284	10,861	266,651 02	24 55
1893	297	11,045	274,053 82	24 81
1894	312	11,166	287,137 37	25 72

Summary of the School Census as taken by the Truant Officers, May, 1894.

[The Statutes make it the duty of the School Committee to ascertain annually the names and ages of all persons between the ages of five and fifteen years, belonging in their respective towns and cities on the first day of May.]

Number of children in the city five years old or more, but less than fifteen	12,770
Number in public schools five years old or more, but less than fifteen	10,198
Number in public schools fifteen years old or more, as shown by the school register	1,294
Number in private schools five years old or more, but less than fifteen	1,770
Number not attending school five years old or more, but less than eight	575
Number not attending school eight years old or more, but less than fourteen	96
Number not attending school fourteen years old or more, but less than fifteen	131
Whole number not attending school five years old or more, but less than fifteen	812
Number in the city five years old or more, but less than six	1,202
Number in the city eight years old or more, but less than fourteen	7,741

Finances.

[For the financial year ending December 1, 1894.]

Cost of instruction in day schools	\$228,873 48
Cost of instruction in evening schools	4,864 00
Cost of care and repairs of schoolhouses, day schools	43,736 27
Cost of care and repairs of schoolhouses, evening schools	2,400 00
Cost of text books and supplies	12,999 49
Expended for incidental expenses	846 63
Expended for transportation of pupils	681 50
Expended for land for Latin and English High Schools	43,911 45
Expended for land for schoolhouse in Ward 3	7,000 00
Expended for land for Sleeper Schoolhouse	4,256 80
Expended for construction of Sleeper Schoolhouse	4,046 66
Expended for finishing the Parker Schoolhouse	5,426 46
Expended for furnishing the Parker Schoolhouse	384 41
Expended for improvements in sanitary arrangements	4,292 55
Total expenditures for all school purposes	\$363,719 70
Deducting from the above the amount received from the Hopkins Fund, \$745.84, and for the tuition of non-resident pupils, \$1,001.25, the actual cost of the schools to the city is	\$361,972 61
Assessed value of real and personal estates, May, 1894	\$77,535,620 00
Ratio of expenditures for school purposes to the valuation in 1894 . . . . .	.0047

Statistics taken from the fifty-eighth annual report of the Secretary of the State Board of Education.

Number of cities and towns: cities, 30; towns, 323;	353
Number of public schools	7,833
Number of pupils of all ages in the public schools during the year	400,609
Number of persons over fifteen years of age attending the public schools	37,105
Per cent of attendance based upon the average membership	91
Number of persons employed as teachers in the public schools during the year: men, 989; women, 10,244;	11,714
Number of teachers who have graduated from normal schools	3,575
Average number of months the public schools have been kept for the entire year	8 $\frac{3}{4}$
Number of high schools	255
Number of teachers in high schools	1,040
Number of pupils in high schools	30,540
Amount expended upon the public schools, exclusive of the expense of school buildings	\$7,800,254 31
Cost of new schoolhouses, permanent improvements, and ordinary repairs	2,167,972 97
Entire expenditure for public school purposes	<hr/> \$9,968,227 28

Special Institutions. .

The following are the statistics of the attendance and expenses of the Massachusetts pupils in the several schools for the deaf, the blind, and the feeble-minded.

AMERICAN ASYLUM AT HARTFORD, CONN.

Number of Massachusetts beneficiaries, 1893-94	60
Paid for these pupils	\$10,945 96

CLARK INSTITUTION, NORTHAMPTON.

Number of Massachusetts beneficiaries, 1893-94	107
Paid for these pupils	\$18,791 14

HORACE MANN SCHOOL, BOSTON.

Number of Massachusetts beneficiaries, 1893-94	105
Paid for these pupils	\$11,696 80

PERKINS INSTITUTION FOR THE BLIND.

Number of Massachusetts beneficiaries, 1893-94	112
Annual appropriation from the state	\$30,000 00

SCHOOL FOR THE FEEBLE-MINDED, WALTHAM.

Number of Massachusetts beneficiaries, 1893-94	167
Annual appropriation from the state	\$25,000 00

TABULAR VIEW.

JANUARY 1, 1895.

Prepared by the Secretary of the School Committee.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1895.
Latin	William F. Bradbury	\$3,000	368
	Theodore P. Adams	2,000	
	Herbert J. Chase	1,300	
	Helen M. Albee	950	
	Constance Alexander	650	
	Charlotte C. Barrell	950	
	Caroline Drew	950	
	Mary C. Hardy	950	
	Margarette M. Leighton ..	950	
	Emma M. Sawyer	950	
	Jennie S. Spring	950	
	Anna M. Warren	750	
	Annie S. Dodge *	400	
English High	Ray Greene Huling	3,000	709
	Edwin L. Sargent	2,000	
	Charles F. Warner	2,000	
	Joseph A. Coolidge	1,200	
	Clara A. Armes	950	
	Harriet E. Bird	1,050	
	Caroline Close	950	
	Mabel L. Chamberlain ...	700	
	Bertha L. Cogswell	750	
	Grace L. Deering	950	
	Myra I. Ellis	1,000	
	Maud A. Lawson	850	
	Henrietta E. McIntire	750	
	Mary Moulton	950	
	Louisa P. Parker	1,000	
	Lillian C. Rogers	800	
	Caroline A. Sawyer	950	
	Emma A. Scudder	950	
	Martha R. Smith	950	
	Maria E. Spare	950	
	Delia M. Stickney	1,050	
	Martha L. Babbitt *	500	
Allston	Benjamin W. Roberts	2,000	574
	Sara A. Bailey	700	
	Emily R. Pitkin	650	
	Susan M. Adams	620	
	Mary Blair	620	
	Mary M. Brigham	620	
	S. Alice Fell	620	
	Susan L. Keniston	620	
	Evelyn B. Kenny	620	
	Ada M. Litchfield	570	
	Nina M. Marsh	620	
	S. Agnes Mulloney	620	

* Secretary and Librarian.

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1895.
Allston	Ida G. Smith.....	\$620	686
	Caroline M. Williams	620	
Harvard	James S. Barrell	2,000	
	Arthur A. Lincoln.....	1,200	
	Ada H. Wellington	700	
	Margaret B. Wellington ..	700	
	Anna M. Brown.....	650	
	Addie L. Bartlett.....	620	
	Marcia R. Bowman	400	
	Elizabeth L. Buckley	620	
	Mary F. Emerson.....	620	
	Frances Fabyan	620	
	Alice V. Flather.....	570	
	Estella J. French	620	
	Eliza S. Getchell	620	
	Adeline M. Murphy.....	620	
	Louise C. Patterson.....	620	
	Annie M. Street	620	
	Emma F. West.....	570	
	Hortense O. Young.....	620	
Morse { Grammar.....	Mary A. Townsend	2,000	{ 400 173
Primary	Mary E. Towle	700	
	Marcia E. Ridlon	650	
	Elizabeth J. Baldwin	620	
	Stella L. Cotton	520	
	Marie B. Daniel	570	
	Annie M. Dow....	620	
	Leila F. Drake	620	
	Annie M. Fellows.....	620	
	Mary E. Leavitt	620	
	Alice E. May.....	570	
	Emilie Richardson	620	
	Mary E. Sawyer	620	
	Lucy M. Soulée.....	620	
	Gertrude D. Sprague.....	570	
Peabody	Frederick S. Cutter	2,000	300
	Addie F. Cleary	700	
	Susan Allison.....	620	
	Anna F. Bellows	620	
	Mabel A. Clark.....	520	
	Charlotte A. Ewell.....	620	
	Florence E. Frost.....	620	
Putnam	Thomas W. Davis	2,000	700
	Frederick B. Thompson ..	1,000	
	Eliza M. Hussey	700	
	Henriette E. de Rochemont	650	
	Ella R. Avery	620	
	Mary A. Carmichael	620	
	Anna L. P. Collins	620	
	Sarah M. Grieves	620	
	Hattie B. Jewell.....	400	
	Annie B. Josselyn	620	

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1895.
Putnam	Louise A. Keeler	\$620	591
	Mabel S. Murray	520	
	Eliza S. Paddack	620	
	Louise A. Stickney	620	
	Mary M. Sullivan	620	
	Annie A. Trelegan	620	
	Myra D. Webster	470	
Shepard	Edward O. Grover	2,000	
	Nellie A. Hutchins	700	
	Ella M. Horne	600	
	Mary C. Adams	620	
	Caroline L. Blake	620	
	Mabel E. Blake	620	
	Emma A. Faulkner	620	
	Emily F. Fessenden	620	
	Harriet Foster	620	
	Louise H. Griswold	620	
	Ellen J. Hunt	620	
	A. Estelle Ingraham	620	
	Flora C. Ingraham	620	
	Melissa M. Lloyd	620	
	Evelyn J. Locke	620	
Thorndike	Ruel H. Fletcher	2,000	500
	Harriet A. Townsend	700	
	Laura A. Westcott	650	
	Grace W. Fletcher	620	
	Lottie L. Griswold	620	
	Emma A. Hopkins	620	
	Elizabeth G. Hutchison ..	620	
	Grace L. Morton	400	
	Mary E. Nason	620	
	S. Louise Regal	620	
	Alice C. Taggart	620	
	Abby S. Taylor	620	
	Lydia A. Witcher	620	
Washington	John W. Freese	2,000	476
	M. Florence McGlashan ..	700	
	Alice P. Fay	650	
	Eldora J. Clark	620	
	Lucy A. Downing	620	
	Mary L. Ells	620	
	Ellen A. Kidder	620	
	Winifred L. Kinsley	620	
	Emily M. Marston	620	
	Emma Penney	470	
	Margaret J. Penney	620	
	Hattie Shepherd	620	
	Mary E. Stiles	620	
	Abby M. Webb	620	
Webster	John D. Billings	2,000	665
	Melzar H. Jackson	1,100	
	Alice C. Phinney	700	
	Martha N. Hanson	700	

Tabular View — *Continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1895.
Webster	Ada A. Billings.....	\$650	63
	Emma E. Billings	570	
	Flora E. Billings	520	
	Ella E. Buttrick.....	620	
	Charlotte M. Chase	620	
	Susan I. Downs.....	620	
	Josephine Hills.....	620	
	Edith M. Keith.....	620	
	M. Josephine Lamprey...	620	
	Anna S. Lamson	620	
	Minnie V. Reid.....	620	
	Harriette E. Shepard.....	620	
	Ellen F. Watson.....	620	
Corlett	Fannie P. Browning	630	
	Mary L. Gamwell.....	620	
Agassiz { Grammar.....	Maria L. Baldwin.....	800	{ 109
{ Primary			
	Sarah E. Barrett.....	620	319
	Mary G. Carpenter.....	620	
	Amy Greaves	520	
	Jennie Lyle	620	
	Minnie A. Noyes.....	620	
	Mary A. Parsons.....	570	
	Jennie L. Upham.....	470	
Boardman.....	Mary A. Lewis	690	
	Florence H. Barrett.....	620	
	Christine R. Denyven....	620	
	Alice Gregg.....	620	
	Elizabeth J. Karcher.....	620	
	Grace Morgan.....	400	
	C. Florence Smith	620	
	Sarah E. Stewart	620	
Cushing	Isadore I. Foster.....	630	69
	Lucy E. Cyr.....	620	
Dana	Georgia E. Martin	590	149
	Jane Macmaster.....	400	
	Matilda Macmaster.....	470	
	Marion B. Magwire	470	
Dunster.....	Susan E. Wyeth	645	176
	Mary E. Colby	620	
	Mary A. Doran.....	470	
	Isabel Foster.....	620	
Felton	Florence A. Rogers	640	176
	S. Emma Davis.....	570	
	Helen E. Hazard	470	
	Carrie H. Smith.....	620	
Gannett.....	Sarah J. A. Davis	640	178
	Annie M. Billings	570	
	Anna M. Jones.....	620	
	Mary A. Rady.....	620	
Gore.....	Frances E. Pendexter	685	562
	Anna E. Callahan	620	
	Addie H. Dale	620	

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1895.
Gore	Maude A. Deehan.....	\$570	86
	Elizabeth B. Gahm	620	
	Katherine L. McElroy....	620	
	Julia G. McHugh.....	400	
	Mary C. McNally.....	620	
	Mary E. Mulloney	620	
	Anastasia Peters	520	
	Emma J. Ross	620	
	Margaret Sullivan	470	
	Jane E. Whoriskey	520	
Holmes	Marianne M. Webb	630	201
	Ellen M. Cyr.....	620	
Lassell	Ellen F. Ball	640	150
	Rose V. Collier.....	620	
	Cora A. Reycroft	620	
	Frances E. Whoriskey....	620	
Lowell.....	Eusebia A. Minard.....	640	339
	Malvina M. Joslin.....	620	
Otis	Agnes J. McElroy	570	211
	Ellen N. Leighton	660	
	Frances Allen	620	
	Bridget T. Boyle	470	
	Ellen B. Collier.....	470	
	Josephine M. Doherty....	620	
	Luella M. Marsh	620	
	Ellen C. Walsh.....	620	
	Kate F. Wellington.....	620	
	Emily C. Dallinger	655	
Parker.....	Mary M. Bucknam	620	86
	Margaret E. Fitzgerald...	400	
	Agnes Marchant.....	400	
	Maude L. Hayward.....	400	
	Charlotte E. Jewell	630	
Quincy	Lucy C. Wyeth.....	620	218
	Margaret Kidd	640	
Reed	Margaret T. Burke	620	117
	Fannie G. Flanders	470	
	Jennie R. Marsh	400	
	Julia A. Robinson.....	620	
	Elizabeth A. Tower.....	640	
Riverside	Amanda M. Alger	620	180
	Mary A. Burke.....	620	
	Mary A. Brown.....	640	
Sargent	Christina D. Barbey.....	620	167
	Alice J. Hubbard.....	400	
	Ella M. Leaver	620	
Stearns	Fannie E. Higgins	640	160
	Maria J. Bacon.....	620	
Tarbell	Ellen A. Cheney	620	160
	Eva A. Taylor.....	620	
	Emma J. Young.....	640	
	Florence J. Alley	530	
	Ellen F. McCarthy.....	620	
	Carrie P. Pierce.....	620	

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1895.
Willard	Amelia Wright	\$710	450
	Sally N. Chamberlain	620	
	M. Elizabeth Evans.....	620	
	Ella F. Gulliver	620	
	Julia S. Gushee.....	620	
	Mary E. G. Harrington...	620	
	Louise W. Harris.....	620	
	Katherine M. Lowell.....	620	
	Emma C. Otis	620	
	Eliza D. Watson.....	620	
	Grace R. Woodward	620	
	Laura Wright	620	
Wyman	Fannie E. M. Dennis.....	650	301
	Addie M. Bettinson.....	620	
	M. Carrie Dickman	620	
	Georgianna P. Dutcher...	620	
	Genevieve S. Flint.....	520	
	Mary M. Gilman	620	
Wellington { Grammar...	Herbert H. Bates.....	2,200	{ 426
{ Primary....	Susan G. Lombard.....	800	{ 281
	Sarah J. Gunnison	800	
	Mary I. Vinton.....	800	
	Carrie H. Stevens.....	700	
	Emma M. Taylor	620	
	Mary I. Ford.....	400	
	Training Class	4,400	
{ Boardman	Mabel S. Eddy	620	45
	Margaret G. Mulloney....	520	
{ Dunster.....	Clara A. Hall.....	570	37
	Mabel L. Sanderson.....	440	
{ Gannett	Gertrude M. Gove	570	55
	Margaret Sherlock.	400	
{ Gore	Selma E. Berthold.....	620	60
{ Sarah S. Wells.....		440	
Kinder- { Lowell	Melinda Gates.....	620	39
gartens. { Frances L. Plimpton.....		440	
{ Moore Street..	Harriette E. Ryan	620	62
	Nellie A. Watson	440	
{ Riverside	Helen I. Hutchison	620	61
	Mabel F. Adams.....	440	
{ Spruce Street..	Katherine C. Richmond..	400	28
Teacher of Botany.....	Sarah E. Brassill	550	
Teacher of Gymnastics..	Clara E. Sheppard	500	
Teachers of Sewing	Agnes Gordon.....	600	
	Alice H. Nay.....	600	
	Sarah J. Stanton.....	200	
Director of Music	Frederick E. Chapman ...	2,000	
Director of Drawing.....	James M. Stone	1,700	
Assistant in Drawing....	Lucia N. Jennison	800	

The Wellington school is a training school composed of grammar and primary pupils taught by young ladies, graduates of normal schools and candidates for the position of teacher, under the direction and with the assistance of the master of the school and his assistants.

Temporary assistants and members of the training class are counted as eight teachers, the sum of their salaries being about equal to the amount paid to that number of regular teachers.

SUPERINTENDENT — Francis Cogswell.....	\$3,000
AGENT — Sanford B. Hubbard.....	1,800
CLERK — Althea B. Frost.....	600
TRUANT OFFICERS — John Carmichael	900
Moses M. Child.....	900
Francis M. Mason	900
William H. Porter.....	700

Summary.

Number of pupils in Latin School	368
Number of pupils in English High School	709
Number of pupils in Grammar Schools	5,490
Number of pupils in Primary Schools	4,970
Number of pupils in Kindergartens	387
Total	11,924
Number of pupils belonging to the Public Schools, January 1, 1894	11,646
Increase of pupils, 1894	278
Increase of pupils, 1893	135
Increase of pupils, 1892	210
Increase of pupils, 1891	222
Average annual increase of pupils, from 1880 to 1890 (inclusive)	331

Cost of Instruction.

Latin School	\$14,359 66	For each pupil	\$39 02
English High School	23,051 00	“ “ “	32 51
Training School	11,068 00	“ “ “	15 65
Grammar Schools	93,574 60	“ “ “	18 48
Primary Schools	62,547 40	“ “ “	13 34
Kindergartens	7,384 82	“ “ “	19 08
Teachers of Sewing	1,400 00		
Director of Music	1,860 00		
Directors of Drawing	2,500 00		
Teacher of Botany	495 00		
Teacher of Gymnastics	440 00		
Substitute Teachers	493 00		
Superintendent	3,000 00		
Agent	1,800 00		
Clerk	600 00		
Special Teacher in Pri- mary Schools	900 00		
Truant Officers	3,400 00		
	\$228,873 48	For each pupil	19 19
Cost of instruction in Evening High School			\$1,396 00
Cost of instruction in Evening Elementary Schools			2,293 00
Cost of instruction in Evening Drawing Schools			*1,175 00
			\$4,864 00

* The director of drawing is principal of these schools. No part of his salary is included in this amount.

The Post Office addresses of the several schools are as follows :

CAMBRIDGE — English High, * Corlett, * Peabody, * Washington, Agassiz, Cushing, Dunster, Holmes, Lowell, Quincy, Riverside.

CAMBRIDGEPORT — Latin, * Allston, * Harvard, * Morse, * Webster, Boardman, Dana, Felton, Gannett, Parker, Sargent, Stearns, Tarbell, * Wellington, Willard.

EAST CAMBRIDGE — * Putnam, * Thorndike, Gore, Lassell, Otis.

NORTH CAMBRIDGE — * Shepard, Reed, Sleeper, Wyman.

Remarks on the Statistics.

The increase over the last school year in the number of pupils registered is 147 ; in the average number belonging, 121 ; in the average daily attendance, 248. In the per cent of attendance there has been an increase of 1.2 per cent. The number belonging to the schools in December, 1893, was 11,646 ; in December, 1894, 11,924 ; an increase of 278. The entire cost of the day schools, excluding the expenditures for new school-houses and new furniture, exceeds that of last year by \$13,083.55, and the cost per pupil by 91 cents. In the entire cost of instruction the increase is \$13,280.36, an increase in the cost per pupil of 98 cents. While Cambridge expends a large amount for her schools, there are *two hundred and thirty-six* towns and cities in the state which make a larger expenditure in proportion to their wealth. In a list of the thirty cities, arranged numerically according to the percentage of their taxable property appropriated to the support of public schools for the year 1893–1894, Cambridge is the *eighteenth* ; and compared with the fifty-four towns and cities of our county, Cambridge is the *thirty-second*. In a list of the towns and cities of the state, arranged numerically according to the sum appropriated for each child between five and fifteen years of age, Cambridge is the *thirty-sixth*.

These statistics relating to the schools of the state are taken from the fifty-eighth annual report of the Secretary of the Board of Education.

* Grammar Schools.

Textbooks and Supplies.

At the meeting of the Board in December, the committee on supplies submitted a detailed report of the expenditures of that committee for the year.

This report was accepted, and it was voted that it be incorporated in the annual report of the school committee. The report is as follows:—

In accordance with Section 29 of the rules of the school board, the Committee on Supplies submit their report for the school year ending July 1, 1894, it being their tenth annual report.

Stock on hand July 1, 1893	\$2,660 06	
Purchases and expenditures from the appropriation	14,562 36	
Purchases and expenditures by exchanges . . .	393 25	
	<hr/>	\$17,615 67
Delivered to schools, officers, etc.	\$14,993 91	
Sold and exchanged from stock	109 22	
Stock on hand July 1, 1894	2,512 54	
	<hr/>	<hr/> 17,615 67

The purchases and expenditures have been:—

For textbooks	\$6,102 89	
Desk and reference books	1,122 89	
Copy and drawing books	1,008 21	
Apparatus and furnishings	1,884 98	
Printing, \$380.81; expressage and labor, \$212.59;	593 40	
Repairing books, \$166.09; diplomas, \$173.28; .	339 37	
Miscellaneous supplies, etc.	3,903 87	
	<hr/>	14,955 61
Less the value of exchanges		393 25
		<hr/> 14,562 36

The net cost of textbooks and supplies is as follows:—

Stock on hand July 1, 1893	\$2,660 06	
Bills paid by the City Treasurer	14,562 36	
	<hr/>	17,222 42
Less stock on hand July 1, 1894	2,512 54	
Cash paid to City Treasurer, sales and damages	233 69	
	<hr/>	2,746 23
		<hr/> 14,476 19

We have, net cost of all schools and officers \$14,476 19
or an average cost per pupil of \$1.243 against \$1.109, for the year 1893; \$1.149, for the year 1892; \$1.248, for the year 1891; \$1.334, for the year 1890; \$.960, for the year 1889; \$1.068, for the year 1888; \$1.051, for the year 1887; \$1.17, for the year 1886; and \$1.88, for the year 1885. The average cost per pupil per annum for ten years has been \$1.221.

The cost of each grade of schools for textbooks and supplies is as follows :—

	Net Expense.	Average per Pupil.				
		1894.	1893.	1892.	1891.	1890.
High Schools.....	\$3,668 81	\$3.794	\$3.969	\$3.826	\$3.855	\$5.362
Grammar Schools.....	5,914 95	1.301	1.106	.969	1.231	1.618
Mixed Schools.....	2,043 30	1.264	1.005	2.398	1.203	.985
Primary Schools.....	1,547 45	.369	.226	.140	.503	.286
Kindergartens	191 73	.588	.497	.316	.648	.....
Evening Schools	448 07	.....	.....	.....	.....	.....
Special Teachers	82 41	.....	.....	.....	.....	.....
Miscellaneous expenses (not chargeable to any grade).	592 26	.....	.....	.....	.....	.....
	\$14,488 98					
Less profit on sales.....	12 79	.....	.....	.....	.....	.....
	\$14,476 19	\$1.243	\$1.109	\$1.149	\$1.248	\$1.334

There has been an increase of expenditure over that of the year 1892–93 of \$1,205.13, or of \$.134 per pupil. The increase in the amount for textbooks is \$564.03; for desk, reference, and library books, \$694.13; for apparatus \$660.58; while the expenditures for copy and drawing books and for miscellaneous supplies are less than last year by \$713.63.

A large amount was expended for desk, reference, and library books, and for physical apparatus for the Latin school this year, but comparatively little for the English high school, which was well supplied last year. The increase in expenditure for the grammar, mixed, and primary schools is due to the introduction of new reading books, the introduction of physics in the grammar schools (160 sets of apparatus have been furnished at a cost of \$492.79), the purchase of a piano for the Training school, and a larger supply of note books, etc., required by the new methods of teaching. A small kindergarten has been opened at North Cambridge, which was furnished with materials.

School Accommodations.

During the summer vacation the two unfinished rooms in the Parker schoolhouse were made ready for use at the opening of the schools in September. The building, as now completed and furnished, cost, exclusive of the land, nearly nineteen thousand dollars. This includes a special expenditure of eight hundred dollars for deep foundation-walls. The building is of brick, and contains six classrooms with convenient cloakrooms and toilet-rooms. It is heated by furnaces, and by means of mixing valves a constant supply of pure air is secured.

In North Cambridge, an eight-room schoolhouse is well under way, and will probably be ready for use by the first of March. The building is of brick, and will cost about twenty-five thousand dollars. The cost of the land was between forty-two and forty-three hundred dollars. The school is named the Sleeper school, in honor of Mr. Solomon S. Sleeper.

Land has been bought for a schoolhouse in East Cambridge, and a committee has been authorized to buy a lot for a schoolhouse which shall accommodate the pupils of the Belmont district and those in that vicinity.

By the purchase of the land behind the English high school building, room has been secured for the extension of the wings of that building when required, and for a new Latin schoolhouse, which is needed at the present time.

New plumbing has been put into the Cushing, old Gannett, Lassell, and Lowell schoolhouses at a cost of nearly forty-three hundred dollars. The objectionable condition of the sanitary arrangements of the Washington and the Harvard school buildings should be remedied during the next summer vacation.

The appointment of a competent mechanic as head janitor is again recommended by the committee on schoolhouses. Their report says, "Such a man could save the city a large sum every year in fuel, and by making small repairs in and about the buildings; he could also greatly increase the efficiency of the janitors by constant supervision."

During the past nine years six new schoolhouses have been built, three have been enlarged or remodelled, and many of the

old ones greatly improved. This work has been done under the supervision of the superintendent of public buildings, Mr. Benjamin H. Steele. The school department found in Mr. Steele a person interested in the schools, and one ready to do all in his power for their better accommodation.

School Reports.

By the rules of the school committee it is one of the duties of the superintendent "to make a report to the Board annually, giving an account of the schools, and making such suggestions as he may deem advisable." For several years his report has been adopted by the Board as the annual report required by statute. It is important, therefore, that the superintendent in preparing his report should keep in mind the use to which it may be put.

Formerly it was the practice of the committee to give a detailed account of each school, even mentioning the teachers by name, but from year to year the reports have been of a more general character; and, in these recent years, it has been the purpose of the superintendent more and more to make them the source from which information can be obtained in regard to the general plan of the work in the schools, and the doings of the committee.

During the past year the superintendent has received many letters from persons seeking information on subjects relating to the schools. It is his intention that this report shall contain such information as would be given should similar letters be received the coming year. In preparing it he has made use of the reports of the several committees of the Board, of statements made by the special teachers, and of information given by teachers of special subjects; and he has not hesitated to copy from previous reports whatever would be of use in carrying out this plan.

Latin School. March 1, 1886, the Classical and English departments of the Cambridge high school were made two separate schools, called respectively "The Cambridge Latin School" and "The Cambridge English High School." At the

time of the separation, the Cambridge high school contained five hundred fifteen pupils, and the number of teachers was sixteen. One hundred sixty-five of the pupils, and six of the teachers went to the Latin school.

The following table shows the growth of the Latin school and the cost of instruction from year to year, beginning with the year 1887, the first full year of its organization. The salary of the secretary and librarian is included in the cost of instruction.

January 1.	Number of Pupils.	Number of Teachers.	Cost of Instruction.	Cost per Pupil.	Number of Graduates.
1887	238	9	\$11,615 00	\$48 80	12
1888	231	10	12,211 00	52 86	22
1889	219	10	12,555 00	57 78	27
1890	227	10	12,607 41	55 54	17
1891	230	10	12,967 50	56 38	36
1892	262	10	12,751 07	48 66	22
1893	311	11	13,425 66	43 17	23
1894	368	12	14,359 66	39 02	27

The cost of the Latin school to the city is less than the above sums by the amount received from the Hopkins fund, a fund which can be used only for Classical instruction. The cost per pupil each year would be from two to three dollars less, according to the number of pupils in the school.

The course of study is arranged for five years. The following is the rule in regard to the admission of pupils: "Pupils who have received the diploma of their respective grammar schools, certifying that they have satisfactorily completed the prescribed course of study, may be admitted to either high school without an examination. For other persons who desire admission, an examination shall be held at the beginning of the autumn term under the direction of the committee on high schools, but pupils may be admitted to advanced standing at any time. No pupil from any class in a grammar school

shall be examined who does not present a certificate that he has pursued his studies during vacation.”

For non-resident pupils the tuition is fifty dollars a year, payable in advance, one-half at the beginning and the other half at the middle of the school year. The sessions of the school begin at 8.30 A. M., and close at 1.30 P. M. The course of study is printed in the appendix of this report.

The Latin school has outgrown its present accommodations, and steps have already been taken for a new building. The land has been bought, and the plans will undoubtedly be drawn without delay.

In September the teacher of physics in this school, Mr. Charles W. Parmenter, after a service of six years, resigned his position to accept the head-mastership of the mechanic arts high school in Boston, and Mr. Herbert J. Chase was appointed his successor.

English High School. The following table shows the growth of the English high school, and the cost of instruction from year to year, beginning with the year 1887, the first full year of its organization. The salary of the secretary and librarian is included in the cost of instruction.

January 1.	Number of Pupils.	Number of Teachers.	Cost of Instruction.	Cost per Pupil.	Number of Graduates.
1887	320	12	\$13,950 00	\$43 59	49
1888	363	12	14,045 00	38 69	42
1889	455	14	16,157 96	35 51	52
1890	518	15	17,962 50	34 68	37
1891	575	16	18,767 50	32 64	48
1892	613	19	20,488 50	33 42	77
1893	656	19	22,095 00	33 68	95
1894	709	21	23,051 00	32 51	91

The English high school was organized March 1, 1886. In 1888, manual training was included in the course of study, the instruction being given at the Cambridge manual training

school. February 12, 1892, the school moved to its present commodious building.

The course of study is arranged for four years. The following is the rule in regard to the admission of pupils: "Pupils who have received the diploma of their respective grammar schools, certifying that they have completed the prescribed course of study, may be admitted to either high school without an examination. For other persons who desire admission, an examination shall be held at the beginning of the autumn term under the direction of the committee on high schools, but pupils may be admitted to advanced standing at any time. No pupil from any class in a grammar school shall be examined who does not present a satisfactory certificate that he has pursued his studies during vacation."

For non-resident pupils who do not take the manual training course, the tuition is fifty dollars a year. For those who take that course, it is one hundred fifty dollars. In both cases the tuition is payable in advance, one-half at the beginning and the other half at the middle of the school year.

The sessions of the school begin at 8.30 A. M., and for pupils not taking the manual training course, end at 1.30 P. M. For pupils taking that course the sessions end at 2.30 P. M.

The building will accommodate about seven hundred pupils, and there is room at the manual training school building for one hundred fifty pupils. At a comparatively small cost, additional rooms can be secured, as the wings were planned for extension. The plan and description of the building and the course of study are printed in the appendix of this report.

Manual Training School. The "Cambridge Manual Training School for Boys" was founded by Mr. Frederick H. Rindge. It is managed by a board of trustees. The land, the buildings, and the equipment were the gift of Mr. Rindge, and the current expenses of the school are paid by him. Although the manual training school is supported by private munificence, and the mechanical work is carried on under the direction of a superintendent, responsible only to the founder, it is, nevertheless, in its essential features, a part of the public school system. All

who take the regular course are enrolled as pupils of the English high school, and their academic work is carried on under the direction of the principal of that school. The school was opened in October, 1888. The first class numbered sixty-two. At the beginning, the course of study was arranged for three years. In 1893, it was changed to a four years' course. Four classes have graduated; the number of graduates being ninety-six. The number of pupils in the school at the present time is one hundred seventy-eight.

Admission to the school is through the English high school. The tuition for membership to both schools is one hundred fifty dollars payable in advance, one-half at the beginning and the other half at the middle of the school year. The sessions of the school begin at 8.30 A. M., and close at 2.30 P. M. The course of study is printed in the appendix of this report.

Manual Training in the Grammar and Primary Schools. The following is the report of a special committee appointed January 1, 1893, to consider the subject of manual training in connection with all the grades of the city schools: —

In view of the excellence of the equipment and the work at the manual training school in our city, established and maintained by Mr. Frederick H. Rindge, your committee believe that the high school grades are abundantly supplied with opportunities for manual training. They see also no reason to change the work of the kindergartens. Manual training in the grammar grades has been the subject of their investigation.

A number of schools in which manual training could be observed were visited, viz.: The Lincoln school in Brookline, the Eliot school in Jamaica Plain, and the Waltham manual training school, also the school for the instruction of teachers, under the direction of Mr. Gustav Larsson, in Boston. A conference was held with Superintendent Cogswell and with Mr. Harry Ellis, superintendent of the Cambridge manual training school; and the opinions of Mr. Samuel B. Capen, formerly president of the Boston school board, and of Mr. Edwin P. Seaver, superintendent of the Boston schools, were obtained in regard to the work in Boston.

Manual training is undoubtedly beneficial both to boys and to girls, and in order to affect the majority of our children, it must be taught in the grammar schools. Its value is both educational and economic. The boy who quickly tires of books, and to whom the study hour is

irksome, is frequently successfully appealed to, and his mind awakened when his hands work with his head, when he has to do with the concrete as well as with the abstract, when the making of an object and not the reading of a paragraph is the means used to increase his stock of knowledge and to develop his powers.

Through handcraft the creative faculty, so often dormant in the pupils of our city schools, is revealed to the pupil, who discovers that he can make as well as acquire, — an important discovery in this world of struggle and competition. Certain pupils to whom shop work is attractive remain in school longer than they could be persuaded to, were the work wholly confined to books. To such, who may be said to have a mechanical bent, manual training offers an opportunity for development to a degree which would probably never be attained without it.

Economically manual training gives familiarity in the use of tools, and a skill to the hands which at times every person finds advantageous. To many it is a valuable stepping-stone in the path of life, while others, whose later vocations are purely literary are broadened and softened by once, at least, having been in touch with those whose lines of life have fallen in very different places; they have seen the dignity of manual labor. Again, the pupil whose nervous constitution is too sensitive to bear the strain of continuous study finds a healthful relaxation and exercise in the work of the bench or the forge.

Of the several systems of manual training, the Swedish or Sloyd, with some changes to adapt it to the American child, is the best. It admits a progressive advancement, and is better suited to the age of our pupils than is the Russian. Because of its educational value, it is even better for girls than cooking and sewing. To obtain the best results the instruction must be given by teachers specially trained, preferably by men. One instructor can handle profitably not more than twenty-four pupils at once at bench work. The pupils of the higher grades should give at least one period of two hours each week. For the primary and lower grammar grades the periods may be shorter. For the higher grades specially equipped rooms must be devoted to the work, and such rooms ought to be in the building in which the pupils receive their other instruction. Time is lost and discipline suffers when the workroom is at a distance from the schoolhouse.

As a basis for estimating the cost of introduction and maintenance of manual training, we may instance the school in Waltham. But one building is fitted for the purpose. Pupils are from the 7th, 8th, and 9th grades. The furnishings and their cost are as follows, viz.: 24 benches, \$312; tools, \$150; 200 lockers, \$150; tool cabinet, \$25; total, \$637. The annual cost of maintenance of this room, and of another room where a few pupils of high school grades work, including instruction, is

about \$2500. In Northampton the expenditure is far less, but the work is very elementary, as the only cutting tool used is the pocket-knife, and the work is done on the ordinary schoolroom desk, protected, when necessary, by a wooden cover. The cost of implements is \$1.00, and the cost of the first year's work, including tools, but exclusive of instruction, in a building of nine rooms containing 450 pupils, is \$97.50. The instruction is given by the regular teachers under the direction of a specialist. There are two sessions a week, of thirty minutes each. The work begins with the second primary grade.

The committee believe that manual training, as one means of education, has great value, and that within a very few years we should have it in our lower schools. They cannot, however, recommend its immediate introduction. Important changes in the course of grammar school studies, both by addition and by re-apportionment, are yet so recent that neither teachers nor pupils are familiar with them; and it does not seem wise to make others now. The present straitened financial conditions warn us to be cautious in making new expenditures.

They have, therefore, no orders to submit to your consideration; but they strongly urge that you keep the subject ever in mind, and that as soon as practicable our elementary school course be enriched by manual training; and they recommend that, in future, every new grammar schoolhouse be provided with a room suitable for shop work, which shall be reserved for this purpose; also that in any revision of the course in drawing the value of mechanical drawing be fully recognized.

Respectfully submitted,

FREDERIC W. TAYLOR,
F. W. TAUSSIG,
W. H. CLANCY,
CHAS. F. WYMAN.

Wellington (Training) School. This school was opened in September, 1884, and differs from the other schools in this respect, — all the grades, except the eighth and ninth, are taught by young teachers. Their work, however, is done under the immediate supervision of a master and three assistants, who are held responsible for the instruction and management of the school.

The object of conducting a school on this plan is to give the Cambridge young women who desire to teach, and who have made special preparation for the work, an opportunity to gain experience under conditions favorable to their own success, and without prejudice to the interest of their pupils.

Graduates of the English high school or of the Latin school,

who have also graduated from one of our State normal schools or from the Boston normal school, are preferred candidates for the position of teacher in this school. Other persons of equal attainments may be elected.

The required term of service is one year; but teachers may be excused or dismissed at any time by the committee on the training school.

The money compensation for the service is two hundred dollars. Teachers employed after the required term of service are paid at the rate of three hundred dollars per annum.

The school contains all the grades of the grammar and primary schools, the number of pupils being about seven hundred. It is expected that a kindergarten will soon be opened in connection with this school.

The cost of the school depends on the number of pupils. The limitation is, that the cost per pupil shall not exceed the average cost of pupils in the other schools of the same grades.

By the rules of the school board, the committee on the training school is authorized to employ six teachers, at a salary not exceeding four hundred dollars per annum, to act as substitutes in the grammar and primary schools, and, when their services are not so required, to work in the schools to which they shall be assigned by the superintendent; the amount received by each teacher as a substitute to be deducted from her salary. These teachers are usually assigned to the training school, that there may be at that school a sufficient number of teachers to make it practicable for the members of the training class to visit other schools of special excellence.

In regard to the establishment of a kindergarten, the views of the committee in charge of the school will be seen by the following extract from their annual report: "Your committee feel that a kindergarten would be of very great service to both the children and the teachers. The children would be taken out of the streets and come under the good influences of the school at least a year earlier, and they would learn the first lessons in obedience and acquire some habits of orderliness and cleanliness and courtesy; they would begin to practise the arts of listening and of answering before they had to attack the

serious problems of reading, writing, and arithmetic ; and the young primary teachers would feel the effect of this training, and perhaps be helped to a firmer and gentler form of government in their own rooms, and to a more systematic method of teaching by the presence of a busy, orderly, happy kindergarten ; and it is reasonable to hope that they might be kept to the level of their best by the unconscious expectation of the children that the happy, active, obedient life that they were used to in the kindergarten was to be continued in the upper school. In the meantime, the master and his assistants would have the best possible opportunity of studying the relation of the kindergarten to the lowest primary grade, and perhaps be able to throw some new light on one of the new problems of education which is now confronting us."

Grammar Schools. The number of pupils in these schools on the first of December was five thousand four hundred ninety, and the number of teachers, including masters and special teachers, was one hundred forty-two. The pupils occupied one hundred twenty-three rooms, an average of nearly forty-five to a room. The average number of pupils to a teacher, the masters and the special teachers being included, was a little less than thirty-nine. The cost of instruction for each pupil for the year has been eighteen dollars forty-eight cents. This does not include the cost of supervision.

The course of study is for six years, but the schools are so classified as to give the pupils an opportunity to complete the course in four years or in five years. The average age of the pupils who entered last September was nine years ten months. The number of graduates was five hundred sixty-three, their average age being fourteen years eleven and a half months. Of these, ten per cent completed the course of study in four years, thirty-two per cent in five years, forty-two per cent in six years, and sixteen per cent in seven or more years.

Pupils are admitted by classes from the primary schools at the beginning of the autumn term ; but individual pupils are admitted at other times, if it is deemed advisable by the subcommittee or the superintendent.

Promotions to the high schools, and from grade to grade in the grammar schools, are made by the teachers under the direction of the masters and the superintendent. No regular pre-announced examinations are held in these schools, but the results of such written exercises and written reviews as the teachers hold from time to time are used as a part of the basis of promotion.

The thoroughness with which the work is done in any school is shown in part by the ability of the pupils to do the work in the high schools. The pupils are admitted to the high schools on trial; and by a rule of the high school committee, any pupil who fails to maintain a suitable rank is reported to that committee, and no pupil thus reported can continue in either high school except by a special vote. Pupils not permitted to remain in the high schools have the privilege of going back to their respective grammar schools, and of returning to either high school at the beginning of the next school year.

In the grammar schools special teachers are appointed to help forward such pupils as seem able to do the work in less than six years, and to aid those who without personal instruction would require more than six years. In the opinion of the superintendent this is one of the most important actions of the Board during these recent years. It removes the most serious objection to the graded system of schools. Equally valuable, it seems to him, would be the services of such a teacher in the English high school. The change from the work in the grammar schools to that in the high schools is the most difficult one made by the pupils in their whole course of instruction. In the grammar schools the pupils are working under the constant guidance of their teachers. In the high schools the teachers meet their pupils for instruction only during the hour of recitation, while even more than in the grammar schools the pupils need the aid of a teacher in the preparation of their lessons, most of their studies being new to them. With this aid many a pupil who now becomes discouraged and disheartened and perhaps drops out of school, or fails of promotion at the end of the year, would be able to do the work successfully, and be greatly benefited by it.

No change has been made in the course of study, except that the work in geography for the fourth and fifth grades has been more definitely fixed by the introduction of Frye's primary geography, and in one school at least the subject of mental arithmetic has been made more prominent. The study of geometry and physics has been continued, and the results have been satisfactory.

The following account of the work in physics, prepared by Mr. Frederick S. Cutter, master of the Peabody grammar school, for Professor Hall's "Elementary Lessons in Physics," shows the details of the work as carried on in that school during the past year: —

The time allotted to physics was one hour a week throughout the year, of which half an hour was for laboratory work and half an hour for recitation in the classroom. For the work in the laboratory the class was divided into divisions of 16 pupils or less. While one division was at work in the laboratory under an assistant teacher, the other pupils of the class were reciting or studying under the direction of the teacher of the classroom. Thus for a class of 48, for a half-hour lesson in the laboratory, the assistant teacher used an hour and a half, while for a class of 56 or 60 two hours were required. In my own school, in which the class numbered 60 pupils, the following was the program: —

Division.	2-2.30.	2.30-3.	3-3.30.	3.30-4.
I	Laboratory	*Geometry	*Reading	Study
II	{ Geometry	Laboratory	Study	{ Reading
III		Study	Laboratory	
IV	Study	*Geometry	*Reading	Laboratory

* Recite together.

It will be seen that during each of the four periods two divisions together were taught by the teacher of the classroom, and one division was engaged in study. Thus the work in no way suffered from giving the laboratory instruction to small divisions. The half-hour for recitation was taken in a following session, when all the divisions were taught together in the classroom by the teacher of physics.

With a class of 48 or less the following program could be used: —

Division.	2-2.30.	2.30-3.	3-3.30.	3.30-4.
I	Laboratory	Study	Geometry	Physics Recitation
II	Geometry	Laboratory	Study	
III	Study	Geometry	Laboratory	

The time for the teaching of physics — and also geometry, which has been introduced — was obtained in the revision of the program by completing the study of geography in the eighth grade, and by some modifications of the work in arithmetic. The one hour a week for physics was supplemented by making written accounts of the experiments a part of the language work. In the making of illustrations, physics was further correlated with the work in drawing.

It was thought at first by some persons that a serious objection to the introduction of laboratory physics into grammar schools, with their large classes, would be the amount of time and labor involved on the part of the teacher in preparation for, and in clearing up after, the laboratory lessons. But I have found that the teacher can be relieved of a large part of this labor by pupils selected from the class who will gladly serve as assistants. In the adjustment of the apparatus for the experiments, nothing should be done for the pupils that they could properly be expected to do for themselves. But in taking from the cabinet, caring for, and putting away, the many articles used, the selected pupils can render valuable assistance. Thus for example, one of my boys had charge of the 16 large glass jars, — the filling with water, the emptying, and the putting away in proper condition. Another pupil had the care of the 16 spring-balances; another, of the over-flow cans; another, of suitable strings and pins etc. It was the duty of one pupil to see that everything needed for an experiment was finally in place, that there might be no needless loss of time on the assembling of a division. In the preparation for an experiment, the names of the articles required were placed upon the blackboard; and the pupils having charge of these articles would see that they were rightly placed in the few moments before the opening of school, so that little or no time for this purpose would be required of the teacher. At the close of school the same pupils would see that everything was clean and dry, and put away in its proper place. The plan of giving to some pupils a share in the management of the work served to increase the general interest and to promote success.

Primary Schools. The primary schools are under the general supervision of a teacher known as a "Special Teacher of Primary Schools," whose work is done under the direction of the superintendent of schools.

The number of pupils in these schools, on the first of December, was four thousand nine hundred seventy, and the number of teachers was one hundred fourteen, being an average of forty-three and six tenths pupils to a teacher. The cost of instruction for each pupil for the year has been thirteen dollars thirty-four cents. This does not include the cost of supervision or of special instruction.

The course of study is for three years. Children five years old are admitted to the first grade at the beginning of the school year, and on the first of March. The average age of those who enter is between five and a half years and six years. Forty-four per cent of the pupils at the present time are in the first grade, twenty-nine per cent in the second, and twenty-seven per cent in the third.

One thousand one hundred fifty-nine pupils graduated last June, at an average age of nine years eight and a half months. Of these, ten per cent completed the course of study in less than three years, fifty-eight per cent in three years, and thirty-two per cent in more than three years.

Pupils are promoted to the grammar schools, and from grade to grade in the primary schools, on the judgment of the teachers, under the direction of the special teacher of primary schools and the superintendent. Promotions by classes are made annually at the beginning of the autumn term; but individual promotions are made at other times, if it is deemed expedient by the sub-committee or the superintendent. During the past year these schools have received for the first time regular instruction in botany, and in the Ling system of Swedish gymnastics. In botany the instruction was given under the supervision of Miss Sarah E. Brassill, and in gymnastics under Miss Clara E. Sheppard.* The course of study is printed in the appendix of this report.

* Miss Sheppard had leave of absence for a few months. During that time her place was filled by Miss Sarah J. Jacobs.

For nearly three years these schools have been under the supervision of Miss Lelia A. Mirick; and under her skilful direction and inspiring influence they have steadily improved both in the character of the work and in the spirit in which the work has been done. The teachers found in Miss Mirick a personal friend, and it was their pleasure to comply with her wishes and to carry out her plans. Miss Mirick, now Mrs. Cutter, carries with her to her new home the respect and esteem of the committee, the superintendent, and the teachers who have become acquainted with her during the thirteen years of her connection with the schools of Cambridge.

Kindergartens. There are now eight kindergartens, a new one having been opened last February in rooms hired by the city at 49 Spruce street, North Cambridge. This school will be removed to the new schoolhouse on Dudley street as soon as that building is completed.

The number of pupils is three hundred eighty-seven, and the number of teachers fifteen. The cost of instruction in these schools the past year has been nearly seven thousand four hundred dollars, or a little more than nineteen dollars a pupil.

It is hoped that during the coming year a kindergarten will be opened in connection with the Wellington (Training) school.

Evening Schools. There are five evening schools, — one high school, and four elementary schools. By the rules of the committee, these schools begin on the second Wednesday of October, and continue every Monday, Wednesday, and Friday evening for fifty evenings. The sessions begin at half-past seven, and continue two hours.

The evening high school is held in the English high school building, and instruction is given in the following subjects: arithmetic, book-keeping, penmanship, English composition, English literature, civics, history, algebra, geometry, phonography, Latin, French, and German. The average attendance of the school for 1893-94 was two hundred sixteen, and the number of teachers was nine. The cost of instruction per pupil was six dollars forty-six cents.

The evening elementary schools occupy rooms in four of the grammar school buildings, — the Allston, Putnam, Shepard, and Webster. The statistics for these schools for 1893–94 are as follows: Average attendance in the Allston school, one hundred two; cost of instruction per pupil, six dollars thirty-one cents. Average attendance in the Putnam school, one hundred forty-four; cost of instruction per pupil, seven dollars six cents. Average attendance in the Webster school, eighty; cost of instruction per pupil, six dollars thirty-four cents. The Shepard school was not opened till last October, and therefore there are no statistics for this school for 1893–94. The greatest hindrance to the prosperity of the evening schools is the irregularity of attendance. More than one-third of the whole number registered attend school less than one-third of the time.

Under the regulations any pupil who is absent three successive sessions, without an excuse satisfactory to the sub-committee or the superintendent, is discharged. This regulation might well be amended by adding the following: And no person whose record in attendance or deportment has been in the past unsatisfactory shall be admitted to an evening school without the permission of the sub-committee or the superintendent. This would prevent a class of persons from joining the schools year after year who derive little or no benefit from them, but whose presence for a few weeks increases the cost of the schools.

Evening Drawing School. This school is under the supervision of the director of drawing for the day schools. It is open fifty evenings during the season, three times a week, beginning about the tenth of October. The school is divided into two classes, the mechanical and the free-hand. In the mechanical class two complete courses are provided, — a three years' course in machine drawing, and a three years' course in architectural drawing. In the free-hand class, provision is made for a three years' course in free-hand drawing, and for a class in moulding in clay. The average attendance of the school for 1893–94 was: Free-hand class, forty; mechanical

class, sixty-three. The cost of instruction per pupil, allowing five hundred dollars of the director's salary for his services in this school, was sixteen dollars twenty-six cents.

Drawing. The Prang system of form-study and color is used in the grammar and primary schools. No drawing books are used until the sixth grade. Color is taught by the use of colored paper in the five lower grades. During the months of May, June, September, and October, the drawing in the grammar schools is from nature.

In the English high school, drawing is compulsory in the first year (entering class) and elective in the second year. No drawing is taught in the third and fourth years of the English high school, or in any class in the Latin school.

Music. Instruction in music by the National or Mason System is given by the regular teachers in all grades, and in the high schools by the director of music. All the schools are under his supervision, and every pupil who is capable of learning to sing is required to give attention to the subject.

Twenty minutes a day in primary, and ten minutes a day in grammar grades are devoted to study, and pupils are taught to sing and sustain their part in reading from the simplest to the most difficult compositions in one, two, three, and four parts.

In the high schools forty-five minutes a week are given to the study of musical form and expression as found in choruses, quartettes, trios, etc., from the standard operas and oratorios.

Sewing. For the past five years sewing has been taught to the girls of the lower grades of the grammar schools. Forty-five minutes have been given to the work once a week in each grade. Two teachers have been employed the full time, and one teacher one-third of the time. The wisdom of introducing sewing into the schools is no longer questioned. The superintendent recommends that the boys of the fourth grade be taught to sew, at least that they be allowed to join the class in sewing, if they show an interest in the work. He also recommends that the committee on sewing be requested to consider

the practicability of introducing cooking into the schools next September, the instruction to be given on Saturdays. As an experiment four classes could be formed, one to meet in each of the following buildings: The Sleeper, the Holmes, the old Latin schoolhouse on Lee street, and the new schoolhouse in Ward Three. These classes should be open to the girls of the eighth and ninth grades.

Vertical Writing. The extent to which vertical writing has been introduced into the schools will be seen by the report and orders adopted by the Board at the meeting in May. The following is the report and the recommendations which were made: —

That in the opinion of the committee on textbooks and courses of study it is inexpedient to proceed at once to the general adoption of the vertical system of writing; but that the evidence as to the probable beneficial effects of the system is so strong that an experimental introduction of it in the Cambridge schools is desirable. The committee therefore recommend, in substitution for the orders referred to it, the following orders: —

I. *Ordered*, That the vertical system of writing be introduced experimentally into the schools of Cambridge for one year, beginning September 1, 1894, in not more than three primary schools, and in the four lower grades of not more than three grammar schools.

II. *Ordered*, That a special committee of three be appointed to take charge of the introduction of the vertical system in conference with the superintendent; to consider the expediency and practicability of engaging a special teacher in the use of this system; to examine and recommend copy books; and to report to the committee at the end of the year.

Teachers — Appointments — Salaries. There are now three hundred twelve teachers in the schools of Cambridge. Of this number twenty-five have been appointed during the year, and fifteen of the twenty-five are graduates of the Cambridge training school.

Among the teachers who have resigned, there is one who entered upon her work in 1849. Forty-five years is a long term of service, but Miss Martha H. Butler taught successfully in the schools of Cambridge for this period. In the report

of the school committee for 1858 were the following words: "The Thorndike Alphabet school goes on year after year in the even tenor of its way, bringing good results at the end of each term. Miss M. H. Butler never relaxes her industry or tires in her work." For thirty-six years longer Miss Butler did go on in the even tenor of her way, bringing good results at the end of each term, never relaxing her industry or tiring in her work.

There is no rule of the school board in regard to the qualifications of persons who may be appointed teachers in the Latin school and in the English high school, but during these recent years only graduates of colleges have been appointed.

No person is eligible to an appointment in the grammar and primary schools who has not had advantages equivalent to a high school course, a normal school course, and a year's experience in teaching. The same qualifications are required for admission to the training school, except the year's experience in teaching.

No person is eligible to an appointment in a kindergarten who has not taken a course of study for at least one year at some kindergarten normal school approved by the committee on kindergartens and the superintendent of schools.

It is the duty of the committee on the examination of teachers to inquire and report as to the qualifications of all persons nominated to be teachers in the grammar and primary schools and in the kindergartens, below the grade of master, before final action on such nominations is taken by the Board.

It is also the duty of this committee to inquire and report to the Board in executive session, as to the success of any teacher in the employment of the city, when so requested by any member of the Board or by the superintendent.

Any member of the Board who is dissatisfied with a teacher shall give notice of such dissatisfaction to the Board; and all further action in relation to such teacher shall be under its direction.

Experience in teaching, whether in or out of the city, may be considered in fixing the salaries of teachers.

For the Latin school and the English high school, all nom-

inations at a salary other than the minimum shall be made only upon the recommendation of a majority of the high school committee.

For the grammar and primary schools, all nominations at a salary other than the minimum shall be made only upon the recommendation of the three members of the ward committee, or of two members and the superintendent.

For the kindergartens, all nominations at a salary other than the minimum shall be made only upon the recommendation of a majority of the committee on kindergartens.

Under the direction of the superintendent, teachers may visit other schools to observe the discipline and instruction. They may be required to attend teachers' meetings or courses of instruction in methods of teaching for one hour a week, unless excused by the superintendent. Such meetings may be held on Saturday morning during term-time, or at such other time, not in school-hours, as the committee on textbooks and courses of study may direct. Meetings held by the superintendent, and meetings called by him, at the request of the director of drawing or the director of music under the authority of the standing committee having supervision of the instruction in these subjects, are in addition to the above requirements.

The salaries of the teachers and school officers are as follows:—

Latin School and English High School.

[illegible]

Grammar Schools.

Masters	.	.	.	.	.	.	.	.	.	\$2,000 00
Sub-Masters	.	.	.	.	.	.	.	.	.	1,000 00
Master's Assistant	.	.	.	.	.	.	.	.	.	700 00
Special Teachers	.	.	.	.	.	.	.	.	.	650 00
Assistants, first year	.	.	.	.	.	.	.	.	.	400 00
Assistants, second year	.	.	.	.	.	.	.	.	.	470 00
with an annual increase of \$50 until \$620, the maximum, is reached.										

Primary Schools and Kindergartens.

The salaries of the teachers of the primary schools and of the kindergartens are the same as those of the assistant teachers in the grammar schools. The assistants in the kindergartens receive for the first year \$400, with an annual increase of \$40 until the maximum salary, \$520, is reached.

Principals of the primary schools receive, in addition to the regular salary, five dollars a year for each separate class in the schools under their charge, and principals of primary schools of seven or more rooms, who are employed in work corresponding to the duties of special teachers in grammar schools, receive thirty dollars additional salary.

Special Teachers and Officers.

Director of Music	\$2,000 00
Director of Drawing	1,700 00
Assistant Teacher of Drawing	800 00
Teachers of Sewing	600 00
Superintendent of Schools	3,000 00
Special Teacher in Primary Schools	1,000 00
Agent of the Committee on Supplies	1,800 00
Truant Officers (four are employed)	900 00
Secretary of the School Committee	300 00
Page of the School Committee	25 00
Secretary and Librarian of the Latin School	400 00
Secretary and Librarian of the English High School	500 00

Truant Officers. Four officers are employed. Their work is done under the direction of a committee of the Board. The city is divided into four districts, and each officer has assigned to him the schools in one district. Among their duties in addition to those defined by the statutes are the following: To visit each school at least once a day; to assist the teachers in enforcing the regulations concerning contagious diseases; to prevent the children from loitering about the school premises; to be in attendance at the evening schools; and in the month of May to take the school census. Monthly meetings of the committee are held to hear the reports of the officers, and decide what action shall be taken in regard to the cases brought before them.

Three truants have been placed on probation by the Court, and eight have been sentenced to a truant school. The Middlesex truant school at North Chelmsford was designated, on

the 19th of December, as the place to which truants and others included in the truant act should be sent. It is hoped and believed that this school, under the management of the excellent superintendent, Mr. Moses A. Warren, will become what every truant school should be, *a real home*. During the year one of the truant officers, Mr. John Collier, has died. The committee, in their annual report, after referring to his death and expressing their appreciation of his services, added: "He was diligent and faithful in the discharge of every duty confided to him."

Contagious Diseases. During the winter of 1893-94, scarlet fever and diphtheria were so prevalent as to lead to the adoption of more stringent rules governing the return of pupils to school who have been exposed to any contagious disease. In January, the following order was adopted by the Board: *Ordered*, That the school board respectfully request the board of health to appoint a competent physician to examine all cases of contagious diseases in houses in which school children live, to keep watch of the course of such cases, and to forward promptly to the secretary of the school board notice of the time at which children who have been sick or quarantined may return to school.

After considerable delay the request was granted, and Dr. Edwin Farnham was appointed the physician "to examine all cases of contagious diseases affecting attendance of children at public schools, and to issue, on behalf of the board of health, the certificates required by chapter 198 of the acts of 1885."

The following is the regulation now in force: No pupil shall be admitted to any school without a certificate from a physician that he or she has been vaccinated. No teacher or pupil shall attend school while any member of the household to which such teacher or pupil belongs is sick with smallpox, varioloid, diphtheria, or scarlet fever, or during the period of two weeks after the death, or recovery, or removal of such sick person; such length of time being certified in writing to the teacher by the physician of the board of health. No teacher or pupil shall be allowed to attend school who is affected with

measles or whooping-cough. Teachers shall have authority to exclude temporarily from school any pupil who may be afflicted with other diseases or eruptions of doubtful character; but all such cases shall be reported at once to the sub-committee having charge of the school.

Lectures on the Weather Maps. During the winter, a series of ten meetings has been held at the Harvard University Museum in Cambridge, where Professor William Morris Davis, assisted by Mr. R. DeC. Ward, met a number of teachers from the grammar schools for the purpose of giving practical instruction in the use of the daily weather maps in the schools, as a means of laying a foundation for a proper understanding of climatology, as it is afterwards encountered in geographical study. These meetings grew out of the action of the New England Meteorological Society in appointing a committee, consisting of Professor William Morris Davis, of Harvard University, Professor Winslow Upton, of Brown University, and Mr. R. DeC. Ward, assistant in meteorology at Harvard and editor of the American Meteorological Journal, "to consider and report upon action that might be taken by or through the Society regarding practical instruction to teachers on the use of the weather maps in schools." The plan proposed by the committee was outlined by Professor Davis to the masters of the Cambridge grammar schools last November, and by them communicated to a limited number of their teachers, who were selected to attend the proposed meetings. The meetings began in November and extended into January. The plan of instruction was based on the outline of the subject given in the Report of the Committee of Ten on Secondary Education, and included brief instruction regarding local weather observation, practical exercises on the preparation and interpretation of weather maps, with some explanation of the relation of the facts that they exhibit to general meteorology. Particular emphasis was given to the importance of advancing slowly, in order that the scholars should really acquire an understanding of the work as it progressed.

As a result of this course, something of elementary observa-

tion of the weather has been begun in several of the schools; outdoor thermometers have been provided, the previous equipment of the schools having been limited to indoor thermometers, which were observed only for hygienic purposes. A number of weather maps were distributed, and outline maps for practice were provided as needed.

Much interest has been shown in the work, and several of the teachers have introduced some systematic instruction in meteorology in their schools.

These lectures have been repeated in Hingham, Mass., and they have proved to be of great help to teachers working along the lines in geography proposed in the report of the Committee of Ten. It is proposed by the committee to offer similar courses during the winter of 1895-96 to teachers in other places. Professor Davis or Mr. Ward will give more definite information in regard to these lectures.

Lectures on Psychology. A course of ten lectures on psychology has been given in the English high school building by Herbert Nichols, Ph. D. These lectures were provided by the "Cantabrigia Club," and were open free to the Cambridge teachers. The interest taken in them has been shown by a large attendance from week to week. These lectures are to be repeated in Boston.

The Public Library and the Schools.

Since 1890, books from the public library have been delivered at the schools once a week for the use of all the grades in the high schools and the three highest grades in the grammar schools. This experiment has been so successful that the restriction as to grades in the grammar schools has been removed, and now the younger pupils will have access to the books of the library, and their general reading will be more directly under the guidance of their teachers.

This action of the trustees is not only another proof of their interest in the schools, but it is a part of a far-reaching plan to bring the library and the people into the closest relation.

The superintendent would do injustice to his own feelings

if he did not refer to her who for more than twenty years was the efficient librarian, and who previous to her connection with the library had been associated with him as an assistant teacher in the Putnam school.

Miss Almira L. Hayward was appointed a teacher in the Putnam school, March 6, 1865. She resigned July 1, 1869, to accept a position in a school at Lookout Mountain, Tennessee. Subsequently she taught in the State normal school of Rhode Island. In 1873, she entered upon what proved to be her life work — her work in the Cambridge public library. She was successful as a teacher, but her preëminent success as a librarian was so conspicuous that her work in the schools was overshadowed. It may be, however, that this work contributed not a little to her greater success in the library. It is certain that she had an abiding interest in the schools, and in many ways rendered them important service. Long will her name be cherished, not only by the superintendent and the teachers, but by the many children who sought her friendly counsel.

On several occasions it has been the privilege of the teachers to have Miss Hayward speak to them of the public library, and suggest ways by which it might become more helpful to the schools. One of these addresses was given only last May. It was my intention at that time to print her paper as a valuable contribution to this report. This seems now especially appropriate, the words then spoken being her last words to the teachers of Cambridge. They were as follows : —

I am very glad of this opportunity to say a word to you on the relation of the schools to the library. We are all educators, and the library is a sort of annex to the schools. A large class come to the library for their light reading, and it is chiefly through the schools, including the college, that our highest work is done. A few words about what the library has to offer you, along the lines of your teaching. First, its reference library, which, we are often assured, is one of the best in the State. During the morning hours there are very few using it; and would it not be a good lesson to the more advanced of your pupils to assign them questions or topics previously, and then come with them to the library some morning and give them a practical lesson in how to use reference books? The librarian would gladly be at liberty to help in any way, if notified beforehand.

We often find the adults who come to use our reference library are "all at sea" till shown what books are most sure to contain the information desired.

Another department you would find useful is our store of foreign photographs, some hundreds in number and affording just the material for an interesting travel talk in connection with history and geography. It may not be known to all of you that in the addition now building we expect to have a children's reading room. This will relieve the larger reading room from the confusion incident upon the presence of so many children, and enable us to give the young people more personal attention.

There can be no doubt that Cambridge children are learning to love books and the library; some of them read too much. Does it not seem to you that two library books a week is enough for the average child under twelve, who is in school and may need some time for home study? What shall we say of the child who takes a new library book each week day, and spends two or three hours of Sunday afternoon at the library?

We have just made up the accounts of the year since the library was opened on Sunday. The total attendance on Sundays was 4,048, and of this number 1,837 were children under fourteen, children, too, who could come and who do come any day in the week. The question of how much good is being done is difficult to answer. When one remembers how unattractive the homes are from which many of these children come, one rejoices that they have the library, and hopes their love for books will lead them to higher and better lives.

You will be glad to know that we have during the past year added many books on elementary science, sure to be of use in the schools as new studies are being introduced. We have recently had prepared a special card list of the books on the natural sciences, and as soon as our funds will warrant the expense we hope to have it printed. As there are more than 400 books, you will see there is no lack of material with which to work. Another special list in preparation relates to civil history, arranged chronologically under countries. This, too, we hope to print in time.

In regard to our basket delivery of books to the schools, let me say how grateful I am for your kind words of appreciation which come to me from time to time. Though obliged to delegate this work to my senior assistant and her helpers, I will at any time gladly advise you as to your choice of books. One favor I would ask of you. Will you each keep a list of the books you find most helpful, and from time to time send me a copy of your list? We sometimes have an opportunity to duplicate books, and are always wishing we knew what the teachers most need for school use. We put in the library twelve copies of "The Century World's Fair Book." They have grown soiled and worn by

constant reading, but we shall gladly buy fresh copies presently. Our greatest difficulty in filling your school orders is to find enough juvenile books on a given topic, South America, for instance. Now there are not more than a dozen juvenile books which relate to this country, and if the Shepard school has secured them, what shall the Allston school do? We have duplicated many books for the schools; have five copies of the Bodley Books and the Zigzag Journeys. Not yet can we afford twenty-five copies. Often we send a book which we think the teacher may read selections from, or sometimes an illustrated book for the help the pictures may give.

The question is often asked: "Do you prefer the teachers should select their own numbers?"

We do, ordinarily, for this reason: The work at the library of discharging the old and selecting and charging the new books must all be done between the hours of 10 A. M. and 2 P. M. in order to have all the baskets delivered before school closes. You can see that anything which saves time at the library is desirable. When you cannot select your numbers, it is a help if with your card you will send ten slips with the name and address written on each.

You will be glad to know that during each of the past two years more than 6,000 books have been sent to the schools, and we often receive inquiries from other libraries as to how we conduct the delivery and whether it pays. I sometimes answer by showing my scrapbook, containing notes of thanks from my friends the teachers.

In closing let me mention a few books you will like to know we have and to tell your pupils about them. First a copy of the "Domesday Book of England," one of the first printed editions. The original of this great census, made under the direction of William the Conqueror in 1086, is kept under lock and key in the Law Records Office in London. The custodian assured two who saw it in 1888 that many more Americans came to see it than Englishmen, and that he thought if he could take the old thick quarto on a travelling exhibition to America he could make money enough to pay off the national debt. Our copy is in four large folio volumes, and many of the high school pupils come to see it when they reach that period in English history.

Another historical book of interest to us is a facsimile of General Washington's account book kept while he lived in Cambridge. One is amused to read such entries as "To cash paid for cleaning the house which was provided for my quarters, and which had been occupied by the Marblehead regiment, £2, 10s. 9d. To cash for recovering my pistols which had been stolen, and for repairing them afterwards, £1, 10s. To barber £1, 10s."

We have in the Memorial library several volumes by Thomas Shepard, first pastor in Cambridge. One of these was published in 1660, and is a collection of sermons on the Parable of the Ten Virgins.

Among our recent purchases is the "Journal of the House of Representatives," when in 1770 it met in Harvard hall, Cambridge. Another treasure which always interests our young visitors is Colonel Higginson's "History of the United States," printed in raised letters for the blind. The collection of autographs loaned us is always interesting, and we are adding to this and our books by Cambridge authors by gifts which will in time give us a valuable collection useful to students of literature. Think of the library and all it contains as so much reserve force, yours to command, to add novelty and enthusiasm to your daily routine.

The First Manual Training School in Cambridge.

The following letter under date of January 4, 1895, was addressed to the superintendent of schools: —

Dear sir, — You were kind enough in 1879 to sanction and approve the design of the Cambridge Industrial School Association to institute a set of lessons at the cost of private individuals, to teach manual labor to boys in the city. And after seven years' experiment you gave your influence when the authorities provided for the continuation of those lessons in the public schools, and accepted the gift of all the tools and apparatus of the association.

I wish now to ask you to do me the favor to place the record of that association in the city archives, so as to preserve the memory of that first attempt to teach the manual arts in the schools; and I have had copied the final report of its proceedings made to the association in 1887, with the hope of its preservation as a piece of history.

I am yours truly,

E. S. DIXWELL.

This first attempt in Cambridge "to teach the manual arts" is so closely related to the work now going on in the public schools, that it seems desirable to the superintendent, not only to comply with the request that has been made, but to print the report with the prominence it so well deserves.

It reads as follows: —

Cambridge Industrial School.

In the autumn of 1879 under the influence of Rev. G. L. Chaney, an association was formed in Cambridge for the pur-

pose of establishing a school for manual training. Such experiment had already in Massachusetts been tried in Gloucester and in Boston. The subject of industrial schools had been agitated abroad and at home. People were convinced that the time had come for beginning such an enterprise, and they looked forward, as their ultimate aim, to the introduction of such training into the public schools of the city.

But in their first steps attention was much occupied by the idea of using such a school as a charity, with the hope of benefiting such poor boys as attended no other school, or were not advancing well in the literary work of the public schools, and who, it was hoped, might be reached and improved or reclaimed by manual training.

The plan was put before the public at a meeting called for the purpose and addressed by gentlemen who had experience in such matters.

A liberal sum was raised by contribution. The city government granted the use of a room in one of their public buildings, which was fitted with proper benches and outfits at the expense of the association. Twelve complete sets of tools suited for wood-working were procured. A suitable teacher, who had been a practical carpenter, was secured; and advertisements were issued for pupils.

Part of those enlisted for the season came from the ranks of the Cambridge Social Union; part came from the Washington grammar school; and part from other applicants drawn by the notices printed in the journals. It was thought best to make some slight nominal charge for tuition; and all were required to pay *one dollar* for the course of *twenty* lessons of two hours each. But it was stipulated that if any lad was unable to pay that amount, he should be aided to earn it either in the school or elsewhere.

Many wealthy citizens also desired their boys to have the proposed lessons; and classes were formed of such pupils, who paid five dollars each.

The lessons were fairly under way on the last of January, 1880. There were six classes of twelve each. The last lesson was given June 16, 1880, to twenty-six pupils.

On reviewing the year's experiment we were led to congratulate ourselves on the result, and to prepare for another season with the benefit of the experience so gained.

The school was begun too late in the season and continued too long. As the lessons were given out-of-school hours, all who were not fully interested in such pursuits found easy excuses for omitting the lesson in order to join in sports, and as the year advanced, such opportunities became more numerous and urgent. So the numbers fell off at the end.

With reluctance the managers were obliged to relinquish the merely benevolent side of their enterprise. Experience showed that the best pupils at the workbench were those who were most attentive and intelligent at their books. The street boys who came to us had no willingness to keep order or to save tools or materials, or to gain information, or to attend to instructions given. Restraint on their rudeness was resented, and kind words were thrown away. It became necessary to have gentlemen present at every lesson to watch delinquents and to assist the teachers. Such idlers withdrew.

The others who remained profited highly by the teaching. All gained ideas and practice which will remain a very useful factor of their being in whatever may be their future walk. Those destined to mechanical pursuits took thus early the first steps to become skilful artisans. And so the association was encouraged to go on. On November 17, 1880, the school was reopened with pupils gathered mostly from the public schools, with a few from the Cambridge Social Union. The number of lessons promised was sixteen, and the number of classes was four. The time devoted to the lessons was, as before, on Wednesday, P. M., and on Saturday; and each lesson continued two hours. The attendance and application of the pupils were satisfactory. To give an idea of the lessons, I will detail what was taught in each of the sixteen lessons.

1. Striking and driving tacks and nails. The proper method of doing this, with practice.

2. Structure of wood. Best method of splitting it and of sawing it from the round log to make it the most useful. Cutting and splitting instruments. Theory and practice.
3. Measuring and sawing.
4. Lining and split sawing.
5. Gauging and sawing.
6. Sharpening and setting planes and planing.
7. Gauging and planing to given dimensions.
8. Mortising and tenoning.
9. Halving and block planing.
10. Rabbeting and dowelling.
11. Joining by double tenoning and slotting.
12. Dove-tailing.
13. Mitering.
14. Key splicing.
- 15 & 16. Making a box.

These lessons follow to a great extent the manual entitled "Wood Working Tools," published by the Industrial school in Boston.

During this year, 1880-81, boys were charged as before one dollar, but were required to pay in advance, as many of the previous year neglected to pay even such a small sum, and did not give their services in lieu thereof.

During the third year, 1881-82, the number instructed was forty, divided into three classes. The lessons continued to be given in hours usually accounted by boys as playtime.

This year the experiment was made of admitting pupils without fee, with the result that a part of both the parents and the children felt that their hold on the school was slighter than when they had to pay so small a sum as one dollar for the whole course of lessons. Still, a majority of the pupils made good progress, and it was remarked by the teacher that the discipline was excellent; and twenty-two of the whole number enrolled their names for the privilege of attending the following year.

On opening the school the next year, 1882-83, there were three classes, — one composed of the former pupils and put to

advanced lessons, and two classes of beginners. These last were put through the same elementary training as their predecessors, and the advanced class took lessons of a higher character, drawn from the Manual before referred to (as published by the Boston Society); and at last they were put to laying out and preparing a miniature house frame, which enabled them to realize the use of all their previous training. They showed keen interest in their work, giving voluntary extra time to complete their task, and had extra time from the teacher. Nearly all desired to engage places for another winter, and expressed a desire for lessons in their summer vacation.

Accordingly, the experiment was tried of a vacation school during the summer of 1883. Fifteen entered their names, and ten remained through several weeks with good results to them, but making a drain on the treasury discouraging for future experiments of that kind.

In 1883-84, on the opening of the regular session of the school in the autumn, there were eight advanced pupils who attended to the close of the term, and a class of beginners, eight of whom continued to the end. The instruction was like what had been before given.

There had hitherto seemed much difficulty in advertising in such way as to reach pupils or parents. Whether a small charge was made, or the lessons were gratuitous, the majority of the boys did not care to give their play hours to a school even of this unusual kind.

From these causes the number of pupils had diminished. So, during the winter of 1884, arrangements were made with the school committee, with the sanction and coöperation of the superintendent of schools and of the teachers of the grammar schools, whereby a class of twelve from each school, selected by the teachers, were sent during school hours to receive manual teaching as a part of their school course. These lessons began March 12, 1884, to five classes of twelve each, and were paid for by our association. This may be considered a very important epoch of our school and of the public schools.

These classes received the same lessons, fourteen in number, as had been given to classes gathered previously in other ways.

The attendance and attention were nearly perfect ; for the boys considered this school as part of their grammar school, and maintained the same order as they would in that. And accordingly their proficiency was quite satisfactory.

1884-85. The same course was pursued in procuring pupils for the next year, 1884-85, i. e., by draft from the grammar schools, with about the same result. The selection seemed to be made by the teachers of the public schools of those who would most easily make up any loss of time from their book studies arising from these manual lessons. If any one of those selected was evidently falling off in grammar school studies, he was withdrawn from the class ; and if any one left the grammar school for any cause, he dropped out of our ranks. When possible, in the early part of our course, the gap was filled by another boy. On the whole, the experiment worked very well, and we felt that benefit was gained and acknowledged.

1885-86. So, the next year, classes were detailed from the grammar schools and one class also from the high school, and the list contained eighty-four lads in seven classes.

Each class received sixteen lessons and were, generally, interested in their work and made marked improvement.

At this time a turning-lathe and its tools were added to the equipment of the school, by the gift of Miss F. M. Mackay, and proved a decided gain, as the boys were eager to learn its use, and some of them became quite expert in turning.

The average attendance from the grammar schools was 95%, and from the high school was 62%. It is to be remarked that the lessons of the high school class took place on Saturday, while their own school was not in session.

At this point it became evident that lessons in manual art could be introduced with good effect into the exercises of the public schools, and with small outlay on the part of the city if tools and workbenches could be furnished. Gentlemen of the school committee were approached, and found to be favorable to the idea of introducing such exercises into the common schools. Rev. Edward H. Hall became our advocate on the Board, and efficiently represented the importance of the meas-

ure, and procured an appropriation of \$400 to pay for instruction. Thereupon the Cambridge Industrial School Association offered to the city its whole apparatus for teaching, with the understanding that such methods as they had pursued should be continued in the public schools. Their offer was accepted by the school committee, and the entire apparatus, after being put in the best condition, was made over, January 24, 1887, to the school committee, and subsequently accepted by them and by the city council. And the association thereupon dissolved, having accomplished, as they believed, the object of their organization.

The funds for the expenses of this school have from the beginning been collected by the zeal of a few persevering individuals, all of them ladies, and were supplied by persons residing mostly in Old Cambridge. They were spent by a comparatively few, who saw to their prudent use and who have successfully conducted the enterprise to the desired result.

I would in quitting the subject speak in terms of commendation of the services of our teacher, Mr. M. C. Beedle, who has shown in conducting the lessons great aptness to illustrate and explain the precepts by manual performance, by words, and also by drawings. He has maintained the order of the school, and secured the respect of the pupils.

I will end this history by expressing the hope that a similar benefit may be wrought for the girls. It is notorious that no instruction has been provided in the public schools for sewing. All the teaching in this art, most essential for girls of all ranks in life, has been given for the last twenty-five years or more in Cambridge by voluntary effort of certain young ladies, who have gathered the poor girls and given them lessons, which the mothers were incapable of giving at home, and which were not provided in their daily schools. For fitting these girls for such life as lies before each of them, the use of the needle is a thousand times more essential than some of the branches aimed at in the curriculum of our schools; and its omission is a great error in their mental and bodily training.

[This report was written in 1887. Sewing has been taught in the schools for the past five years.]

IN SCHOOL COMMITTEE, February 21, 1895.

Voted, That the report prepared by the superintendent be adopted as the annual report of the school committee for 1894, and that the secretary be authorized to append the names of the members of the committee thereto.

SANFORD B. HUBBARD,
Secretary.

Members of the School Committee for 1894.

WILLIAM A. BANCROFT, *Chairman ex officio.*

ELLEN A. GOODWIN,	ANNE CLARK STEWART,
WILLIAM TAGGARD PIPER,	EDWARD B. MALLEY,
† ALBERT BUSHNELL HART,	WILLIAM H. CLANCY,
* FRANK W. TAUSSIG,	CHARLES F. WYMAN,
§ PHEBE M. KENDALL,	WILLIAM A. MUNROE,
ROBERT O. FULLER,	MARY E. MITCHELL,
ALPHONSO E. WHITE,	GEORGE P. JOHNSON,
‡ CAROLINE L. EDGERLY,	CAROLYN P. CHASE,
FREDERIC W. TAYLOR.	

* Resigned, Sept. 20.
§ Resigned, March 15.

† Elected, Oct. 9.
‡ Elected, April 3.

FRANCIS COGSWELL,
Superintendent of Public Schools.

APPENDIX.

COURSE OF STUDY FOR THE CAMBRIDGE LATIN SCHOOL.

The course of study is almost wholly decided by the requirements for admission to Harvard College. The course is also of necessity slightly varied, as the ability of the class varies. The work which is not done in any one year must be done in the next.

Fifth Class. (Tenth Grade.)

Latin, five times a week during the year. Collar & Daniell's Beginner's Latin Book, entire.

Algebra, five times a week during the year. The Metric System.

Physiology and Hygiene, three times a week the first four months.

History of England, three times a week the last six months.

English, three times a week during the year. Chittenden's English Composition; The Lady of the Lake. Daily practice in writing English.

Fourth Class. (Eleventh Grade.)

Latin, five times a week during the year. Cæsar's Gallic War, four books; Allen & Greenough's Latin Grammar; Daniell's Latin Composition.

French, four times a week during the year. Bôcher's Otto's Grammar, Part I.; Worman's First French Book; Peppino; Siège de Berlin.

or

German, four times a week during the year. Half of Collar's Eysenbach's Lessons; Worman's First German Book; van Daell's Preparatory German Reader; Höher als die Kirche; Grimm's Märchen.

Geometry, five times a week the first five months.

Greek and Roman History, the last five months.

English, one exercise a week for the year. Sir Roger de Coverley Papers; The House of the Seven Gables; The Vicar of Wakefield. Theme writing twice a week.

Third Class. (Twelfth Grade.)

Latin, five times a week during the year. Cæsar's Gallic War the first two months; The Æneid the last eight months, Books I., II., III.; Allen & Greenough's Latin Grammar.

Greek, five times a week during the year. White's Beginner's Greek Book, fifty-one lessons. Chapters I., II., III., of Book I. of the *Anabasis*.

French, four times a week during the year. Bôcher's Otto's Grammar, Part II.; *Le Conscriit*; *La Tulipe Noire*; French Composition (Anecdotes); memorizing of Anecdotes; sight reading.

or

German, four times a week during the year. Collar's Eysenbach's Lessons; *Die Jungfrau von Orleans*; *Minna von Barnhelm*.

Physics, every other day during the year.

English, twice a week during the year. *As You Like It*; *Tales of a Traveller*; *De Foe's History of the Plague in London*. Theme writing twice a week.

Second Class. (Thirteenth Grade.)

Latin, five times a week during the year. The *Æneid*, Books IV., V., VI., VII.; Nepos's Lives of Miltiades, Themistocles, Aristides, Pausanias, Cimon, Alcibiades, Lysander, Thrasybulus; Sallust's *Catiline*; Jones's Latin Composition, forty exercises; Latin Grammar. Written exercises in Latin, or Latin at sight, once a week.

Greek, five times a week during the year. Goodwin's Greek Reader to page 110; Goodwin's Greek Grammar; Jones's Greek Composition, ten exercises. Written exercises in Greek Grammar, or Greek at sight, once a week the last four months.

French, every other day during the year. *Mlle. de la Seiglière*; *L'Avare*; French Composition (Anecdotes); French Grammar; sight reading.

or

German, every other day during the year. Peter Schlemihl; *Wilhelm Tell*; *Hermann und Dorothea*; Harris's German Composition.

Physics, every other day during the year. The forty experiments required for admission to Harvard College.

Ancient History, Greece and Rome, every other day during the year.

Algebra, every other day during the year. Written examinations once a week during the last five months.

English, once a week during the year. Woodstock. Written essays.

First Class. (Fourteenth Grade.)

Latin, five times a week during the year. The *Æneid*, Books VIII., IX., X., XI., XII., and the *Bucolics* and the *Georgics*; Cicero, twelve orations, of which two are at sight. Also written exercises twice a week during the year in Latin Composition (including the review of Nepos for written work), or Latin at sight.

Greek, five times a week during the year. Homer, Books I., II., III., entire, and the other selections in Johnson's Iliad; Jones's Greek Composition, last thirty exercises. Also written exercises once a week during the year in prose composition, Greek Grammar, or Greek at sight.

Geometry, every day during the first five months; every other day the last five months. Also written exercises, including original demonstrations, once a week during the year.

English, every other day during the year. This includes reading (for the first time, or in review) all the books in English required for admission to Harvard College. For 1895 these are: Merchant of Venice; Twelfth Night; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Evangeline; Sir Roger de Coverley Papers; Macaulay's Essays on Milton and Addison; Webster's First Bunker Hill Oration; The Sketch Book; The Abbot.

This course of study gives, for the second class, four recitations a day during the week; for the third class, three and four recitations alternately; and for the first, fourth, and fifth classes, three recitations a day. The extra time assigned to the second class is necessary for a proper preparation for the requirements in the preliminary examination for admission to Harvard College. Those who succeed in passing the "Eight-Hour Requirements" in their preliminaries have less work left for the last year. Those who fail to pass any one or more of their preliminaries have as hard a year the last as the last but one. Some prefer to put a part of the work of the last year but one into the last year. Those who are good students and willing to work can complete the five years' course in four years. In the class that entered college last June there were three such; in the present first class there are three; in the second class, five; in the third class, seven; and in the fifth class, nine, who are trying to complete the course in four years. Those who do this usually stand at, or near, the head of their classes.

Textbooks in the Latin School.

English Literature. Chittenden's English Composition; Hill's Foundations of Rhetoric; Lockwood's Lessons in English; Strang's Exercises in English; Evangeline; Courtship of Miles Standish; The Lady of the Lake; Marmion; The Abbot; Woodstock; Ivanhoe; As You Like It; Julius Cæsar; Merchant of Venice; Twelfth Night; The House of the Seven Gables; The Alhambra; Tales of a Traveller; The Sketch Book; Silas Marner; Webster's First Bunker Hill Oration; Sir Roger de Coverley Papers; Macaulay's Essay on the Earl of Chatham; Macaulay's Essays on Milton and Addison; Emerson's American Scholar; David

- Copperfield; De Foe's History of the Plague in London; Sohrab and Rustum; Milton's Lyrics; The Vicar of Wakefield.
- French. Worman's First French Book; Otto's French Grammar; La Petite Grammaire; Blouet's Primer of French Composition; Grandgent's Materials for French Composition; Gasc's French Dictionary; L'Abbé Constantin; L'Avare; La Belle-Nivernaise; La Chrestomathie Moderne; La Chute; Le Conscrit; Les Femmes Savantes; Le Siège de Berlin; La Tulipe Noire; Le Chalet; Mlle. de la Seiglière; Mlle. Solange; Peppino.
- German. Worman's First German Book; Collar's Eysenbach's German Lessons; Köhler's German Dictionary; van Daell's Preparatory German Lessons; Höher als die Kirche; Die Jungfrau von Orleans; Grimm's Märchen; Minna von Barnhelm; Peter Schlemihl; Wilhelm Tell; Hermann und Dorothea; Harris's German Composition; Freytag's Aus neuer Zeit; Immensee.
- Latin. Collar & Daniell's Beginner's Latin Book; Collar's Practical Latin Composition; Daniell's Exercises in Latin Prose Composition; Jones's Latin Prose Composition; Allen & Greenough's Latin Grammar; Allen & Greenough's Cæsar; Allen & Greenough's Cicero; Allen & Greenough's Ovid; Allen & Greenough's Virgil; Chase & Stuart's Cornelius Nepos, and Sallust. For sight reading, Harper's text editions of Cæsar, Cicero, and Virgil.
- Greek. White's Beginner's Greek Book; Jones's Greek Prose Composition; Woodruff's Greek Prose Composition; Goodwin's Greek Grammar and Reader; Crosby's Lexicon to the Anabasis; Homeric Lexicon; Liddell & Scott's Lexicon; Johnson's Iliad; Anabasis; Hellenica; Cyropædia.
- History. Montgomery's History of England; Creighton's History of Rome; Leighton's History of Rome; Pennell's History of Greece; Oman's History of Greece; Sheldon's Studies in Greek and Roman History; Allen's Short History of the Roman People.
- Mathematics. Bradbury's Elementary Algebra; Bradbury & Emery's Academic Algebra; Bradbury's Academic Geometry; Bradbury's Trigonometry and Surveying.
- Music. Harmony in Praise; Codas.
- Sciences. Harvard Descriptive List of Experiments in Physics; Hall & Bergen's Physics; Gage's Introduction to Physical Science; Hunt's Hygiene.
- Miscellaneous. Edwards's Mythology; Harvard Examination Papers.

COURSE OF STUDY FOR THE ENGLISH HIGH SCHOOL.

The course of study pursued by the English high school is substantially that ordered by the school committee in 1886, at the time of the division of the Cambridge high school.

The outline here given represents the course in its present state.

Fourth Class. (Tenth Grade.)

	Studies.	Months.	Exercises per week.
1	Latin	10	5
2	Commercial Arithmetic and Business Forms	10	5
3	Algebra	10	5
4	History of England	6	3
5	Physiology and Hygiene (after History) .	4	3
6	English Composition	10	2
7	American Prose Writers	5	1
8	American Poets	5	1
9	Drawing	10	1

An option is offered between the first two numbers, Latin and arithmetic. The other numbers are prescribed for all.

The prose writers studied are Hawthorne, Irving, Longfellow, Whittier, Holmes, Lowell, Thoreau, and Emerson; the poets studied are Longfellow, Whittier, Bryant, Holmes, Lowell, and Emerson.

The English of the first year, apart from the literature read, is based on Chittenden's Elements of English Composition, and covers the following branches: Punctuation, capitals, the combination and transformation of elements, the principles of expression, the figures of speech, and exercises in development, reproduction, paraphrasing, composition, and letter writing.

Third Class. (Eleventh Grade.)

	Studies.	Months.	Exercises per week.
1	Latin	10	5
2	Book-Keeping and the Laws of Business	10	5
3	Geometry	6	5
4	English (after Geometry)	4	5
5	Physics	10	5
6	English Literature	10	1

The option between Latin and commercial subjects is continued, pupils taking number one or number two in accordance with their decision of the preceding year.

The English of the second year, based on Lockwood's Lessons in English, includes the following: A review, in new forms, and a continuation of the first year's work; a brief history of the English language, its Anglo-Saxon and classical elements; and the more obvious properties of diction.

The works studied in English literature are Twice-Told Tales, Dickens's Christmas Stories, The Lady of the Lake, or Marmion, and Ivanhoe.

The course in physics includes laboratory work by the pupils, experiments by the teacher, records of observation and inferences, and the usual recitation and examination methods.

Second Class. (Twelfth Grade.)

	Studies.	Months.	Exercises per week.
1	Latin	10	5
2	Preparatory Studies for Scientific Schools	10	5
3	French	10	5
4	German	10	5
5	Chemistry	10	3
6	Botany	10	2
7	English Literature	10	1

Number two may be taken instead of number one (Latin). This alternative is intended for pupils preparing for the Massachusetts Institute of Technology, the Lawrence Scientific School, and the science courses of the several colleges. It includes reviews of algebra and geometry, with advanced work in both, also reviews of arithmetic, and is designed to prepare pupils for their preliminary examinations.

There is also an option between number three (French) and number four (German). Pupils will not be permitted to take both in addition to the other studies that are required, unless their previous record indicates that they can do so without detriment to their scholarship or health. Numbers five, six, and seven are required of all. No other options than those authorized by the school committee, and here pointed out, will be permitted.

No provision is made for a commercial course extending beyond the first two years. Pupils who have finished this course, and who desire to continue their studies two years longer and receive a diploma, may do so. As they are not prepared to enter upon number one (Latin) for this year, and may not wish, since they are not candidates for higher institutions, to take number two (the alternative offered for number one), they may, for another alternative, begin Latin with the entering class. They will take for their other studies either number three or number four, and numbers five, six, and seven.

The course in chemistry consists largely in laboratory practice, great importance being attached to skilful manipulation, keen observation, logical reasoning, and the neat, orderly, and accurate recording of work done and results reached. Similar methods, so far as the nature of the subject permits, are followed in the botanical work of the year.

The literature of this year includes, *The Deserted Village* and *Traveller*, *Gray's Elegy in a Country Churchyard*, *Sir Roger de Coverley Papers*, *The Tale of Two Cities*, and *Quentin Durward*.

First Class. (Thirteenth Grade.)

	Studies.	Months.	Exercises per week.
1	Latin (alternating with number two) .	10	2 or 3
2	Ancient and Mediæval History. . . .	10	3 or 2
3	United States History, English Language, and English Literature	10	5
4	Mathematics	10	5
5	French	10	5
6	German	10	5
7	Astronomy	6	3
8	Civics	4	3
9	English	10	5

Numbers three and four are designed for those who do not take numbers one and two. Under the English of number three is included practice in English composition; also for (1895) the critical reading of The Merchant of Venice, Twelfth Night, the Sir Roger de Coverley Papers, Macaulay's Select Essays, The Sketch Book, The Abbot, Webster's First Bunker Hill Oration, Evangeline, Milton's L'Allegro, Il Penseroso, Comus and Lycidas.

Number four includes advanced algebra and solid geometry.

Numbers three and four are prescribed for the final examinations for admission to the Institute of Technology and the Lawrence Scientific School, and are suitable for candidates for higher scientific courses in general.

The option between number five (French) and number six (German) is continued.

The remaining numbers (seven, eight, and nine) are prescribed for all.

Special study is given (under number nine) to the works of Shakespeare. The plays usually read are Julius Cæsar, The Merchant of Venice, A Midsummer-Night's Dream, Macbeth, and Twelfth Night. In addition, a survey of the field of English literature is made, necessarily brief and general, but with an endeavor to note the more prominent writers and productions in their right relations one to another, and in their proper historical environment.

In addition to the work prescribed in the foregoing course, special individual literature or rhetorical exercises are required at regular intervals of the lower classes, and, so far as practicable, of the upper also. For this work, the pupils of a room are divided into sections.

The pupil's exercise may be a composition, a talk, a recitation, a declamation, a part in a dialogue or a colloquy, a report of some investigation or visit or endeavor to get information, the preparation of a class (or section) paper, or anything else in the line of his taste or power, provided always that the proposed exercise shall meet the teacher's approval.

The exercises may be illustrated by maps, photographs, drawings on the board, quotations, — by anything or in any way that will contribute to a better understanding of the subject presented.

While, in general, it is desirable that the exercise shall hold some relation to the authors and literary works that are studied at the time it is prepared, it is intended to leave a generous margin for whatever individuality the pupil may possess.

The pupil's subject should be reported to the teacher two weeks in advance of presentation.

Drawing and music are regarded as important branches of the course of study. The new building, with its commodious drawing-room and hall, has made it possible to make a beginning in giving these subjects the attention which, because of changes and lack of facilities, they have not for the past few years received.

While the studies of the English high school are selected and arranged with sole reference to the wants of those who are not to enter college, pupils of good capacity need only to supplement these studies by a moderate amount of outside work to gain admission to such colleges as offer courses that do not include Greek. In this way several graduates of the school have entered college and are maintaining an honorable standing there.

Diplomas are awarded to those only who have honorably completed a four years' course of study or its full equivalent.

The number of recitations per day for other pupils than those in the Manual Training school is usually three, but sometimes four.

But little more than one quarter of the school session is left for the preparation of lessons. Failure to do fair work is generally associated with a lack of proper daily application. For the pupil of average capacity who makes the most of his opportunities at school, two hours of home study each school day will doubtless suffice. If the pupil neglects to study at home, parents may assume that he is not doing at school what he ought. In those rare cases in which faithful pupils are overburdened because of frail health or lack of mental endurance, a seasonable conference between parents and teachers is desirable.

Cards giving the standing of each pupil will be sent home once in two months for inspection and signature. Scholarship marks are on a scale of 100. A mark above 90 indicates excellent rank ; between 80 and 90, good rank ; between 70 and 80, fair rank ; below 70, poor rank. The fact is recognized, however, that certain elements of a sound scholarly spirit, such as self-reliance, zeal, persistency, conscientiousness, love of truth, cannot adequately be expressed in figures. Those whose marks fall below 60 are reported to the head master for advice, warning, reference to the high school committee, or removal to a lower class. In this connection, attention is called to the following vote of the school committee, passed July 6, 1886 : —

Pupils recommended by the committee on examinations and promotions shall be admitted to the Latin school and the English high school in September on trial. Should any of these pupils fail to maintain a suitable rank during the autumn term, that fact shall be reported to the high school committee at the close of said term, and no pupil thus reported shall continue in either school except by a vote of the high school committee.

It is very important that at the beginning the pupil shall thoroughly master principles, and thereby make his later work successful. When this is not done, the recovery of lost grounds is extremely difficult. He is earnestly urged to cultivate from the outset sound habits of work, — such habits as will give him a reputation for promptness, punctuality, order, neatness, system, concentration, thoroughness. Aside from the immediate scholarly results of such habits, they have in their bearing upon the pupil's subsequent life a value that cannot be too highly regarded.

Many of the exercises of the school, like experiments by the teacher, illustrations with the camera, object lessons, much of the laboratory work in science and of the bench work in the shop, are of such a nature that, if the pupil misses them, they cannot be made good to him. Moreover, absence embarrasses the instruction of the class, and thus seriously affects its progress. It is excusable only when it cannot be avoided.

It is presumed that pupils in this school mean to conduct themselves honorably and becomingly, — a presumption justified by the commendable behavior of nearly all. It is the aim of the school to strengthen the sense of propriety, duty, and honor by trusting it. Boys and girls at school are *citizens* as fully as they can ever be (see sect. I., art. XIV., Const. U. S.) ; it becomes them, therefore, in school and elsewhere, now as throughout their lives, to practise the duties, cultivate the graces, and display the loyalty of good American citizenship. Only in cases of conspicuous failure in conduct will a deportment record be kept.

It is hoped that parents will note carefully such reports as they may receive, and, if they are unsatisfactory, coöperate with teachers in efforts to secure closer attention to duty.

Textbooks in the English High School.

English Literature. Brooke's Primer of English Literature; Chittenden's English Composition; Hill's Foundations of Rhetoric; Lockwood's Lessons in English; Strang's Exercises in English; Swett's Elocution; American Poetry; American Prose; Dickens's Christmas Stories; Tale of Two Cities; David Copperfield; Gray's Select Poems; The Abbot; Ivanhoe; Quentin Durward; The Talisman; The Lady of the Lake; Marmion; Macaulay's Select Essays; Macaulay's Essay on the Earl of Chatham; Julius Cæsar; Macbeth; Merchant of Venice; A Midsummer-Night's Dream; Twelfth Night; Paradise Lost; Milton's Lyrics; Sir Roger de Coverley Papers; The Traveller; The Deserted Village; The Princess; Twice-Told Tales; Sohrab and Rustum; Emerson's American Scholar; The Sketch Book; The Alhambra; Webster's First Bunker Hill Oration.

French. Worman's First French Book; Otto's French Grammar; Gasc's French Dictionary; L'Avare; Le Conscrit; Le Siège de Berlin; Peppino; Récits d'Histoire, Part II.; La Belle-Nivernaise; La Chute; Mlle. Solange; L'Abbé Constantin; Mlle. de la Seiglière; Histoire d'un Paysan; Récits de la Vieille France; Le Pacte de Famine; Grandgent's Materials for French Composition.

German. Worman's First German Book; Collar's Eysenbach's German Lessons; Harris's German Composition; Köhler's German Dictionary; Höher als die Kirche; Grimm's Märchen; Minna von Barnhelm; Die Jungfrau von Orleans; Immensee; Freytag's Aus neuer Zeit; Hermann und Dorothea; Wilhelm Tell.

Latin. Collar & Daniell's Beginner's Latin Book; Allen & Greenough's Latin Grammar; Allen & Greenough's Cæsar; Allen & Greenough's Ovid; Allen & Greenough's Virgil; Chase & Stuart's Cornelius Nepos.

History. Johnston's United States; Montgomery's History of England; Swinton's Outlines of the World's History.

Mathematics. Bradbury's Elementary Algebra; Bradbury & Emery's Academic Algebra; Wentworth's Algebra; Bradbury's Academic Geometry; Bradbury's Trigonometry and Surveying; Wentworth's Elements of Geometry; Wentworth's Solid Geometry; Wentworth & Hill's Exercises in Arithmetic; Crittenden's Commercial Arithmetic; Duff's Book-keeping.

Music. Codas.

Sciences. Appleton's School Physics; Gage's Introduction to Physical Science; Hall & Bergen's Physics; Gray's School and Field-Book of Botany; Hunt's Hygiene; Young's Astronomy; Williams's Chemistry.

Miscellaneous. Edwards's Mythology; Fiske's Civil Government; Dawes's How We are Governed.

THE MANUAL TRAINING SCHOOL.

The Cambridge Manual Training School for Boys was founded by Mr. Frederick H. Rindge, and is under the immediate control of a committee appointed by him to carry his plans into execution. The organization of the school for 1894-1895 is as follows : —

SUPERVISING COMMITTEE.

WILLIAM E. RUSSELL,	T. WENTWORTH HIGGINSON,
SAMUEL L. MONTAGUE,	ROBERT COWEN,
ANDREW MCF. DAVIS,	EDWIN B. HALE,
*HARRY ELLIS.	

TEACHERS.

Mechanical Work.

(Including Shop Work and Drawing.)

*HARRY ELLIS, *Superintendent.*

ALLAN K. SWEET,	ALBERT L. WARE,
JAMES G. TELFER,	WALLACE B. BLANDIN,
WALTER M. SMITH,	SIDNEY I. B. STODDER,
FREDERICK B. SCOTTON,	FREDERICK O. SMITH,
FRED L. PANCOAST.	

Academic Work.

RAY GREENE HULING, *Head Master.*

CHARLES F. WARNER, *Master.*

LOUISA P. PARKER,	MYRA I. ELLIS.
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Special Instructors.

FREDERIC W. TAYLOR, M. D., *Physical Examiner and Emergency Lecturer.*

CAPT. WALTER E. LOMBARD, *Instructor in Military Drill.*

ALBERT P. BRIGGS, *Instructor in Singing.*

Superintendent's Clerks.

ROBERT C. HARLOW,	WILLIAM F. HAVERTY.
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*Died April 1, 1895.

Only boys who have been admitted to the English high school will be permitted to elect the manual course of study. The founder desires that they shall be of good health and physique.

Pupils who take this course will give three hours a day to academic work under teachers of the English high school, devoting two hours to recitations and one to study, and three hours a day to mechanical work under teachers of the Manual Training school, two hours being given to the bench and one to drawing. The provisions for academic work are made by the city of Cambridge through the English high school, and those for the mechanical work are supplied by Mr. Rindge.

No pupil will be permitted to take that part of the course of study assigned to one school without also taking the part assigned to the other.

The course of study is as follows : —

First Year.						Hours per week.	Months per year.
1.	Elementary Algebra	.	.	.	.	5	10
2.	English History	.	.	.	.	3	7
3.	Civil Government	.	.	.	.	3	3
4.	English Language and Literature	.	.	.	.	2	10
5.	Drawing	.	.	.	.	5	10
6.	Carpentry, Joinery, and Iron Fitting	.	.	.	.	10	10

The course in algebra includes definitions and notation, addition, subtraction, multiplication and division, factoring, fractions, equations of the first degree with one or more than one unknown quantity, powers and roots, radicals and affected quadratic equations.

The textbook prescribed for the course in English history is Montgomery's Leading Facts. The topical method of instruction is employed and the boys' note-books contain topics, historical maps, notes of collateral reading, important dates, and various other memory aids. Photographs of persons, places and scenes, guide-books of the Tower of London and Westminster, facsimiles of the Magna Charta, of famous death warrants, and of the earliest newspapers printed, are utilized as helps in this study.

The course in civil government is based upon Dawes's How We Are Governed. The methods used are similar to those employed in the teaching of history.

The instruction in English follows the plan of Chittenden's Elements of English Composition. Frequent themes are required. The Litera-

ture studied is selected from the leading American authors and includes both prose and poetry.

The course in drawing includes:— Use of T-square, triangles, scale, pencil and compass, mechanical alphabet and its applications, geometrical constructions, projections, prisms, cylinders, etc., dimensioning, intersections and developments, and tests.

The course in carpentry and joinery is as follows :— Saw and chisel exercises, halved joints, blind mortise and tenon joints, open mortise and tenon joints, halved dove-tailed joints, dove-tailed joints, brace joints, boring exercises, dowel joints, table leg and rail, glued triangle having angles of 30, 60 and 90 degrees, model of a newel post, tool chest, shoe blacking stand, etc.

The tools used are:— Rip, cross-cut, back and key-hole saws; block, jack, rabbet planes and jointer; try-square, chisels, gouges, bit-stock, bits, bevel marking guage, hammer, nail set, mallet, screw-driver, counter sink, brad awl, spoke shave, clamps, wood files, drawing knife, mitre box, oilstone and grindstone.

The course in iron fitting is as follows :— Chipping, filing, scraping, polishing, fitting of sliding parts, drilling, hand turning, bolt cutting, tapping, etc.

The tools used are :— Hardened steel try square, outside spring calipers, spring dividers, steel scratch awl, prick punch, centre punch, file card, brass vise jaws, ball-peen hammer, cape chisel, flat chisel and various forms and sizes of files.

Second Year.

	Hours per week.	Months per year.
1. Geometry	3	10
2. Physics	5	10
3. English Language and Literature	2	10
4. Drawing	5	10
5. Pattern Making, Blacksmithing and Casting,	10	10

The instruction in geometry follows closely the plan of the first three books of Bradbury's Academic Plane Geometry, i. e., through the geometry of the circle. Very little is required in books IV. and V. because the ground is covered by the practice in mechanical drawing. The aim of the course is to cultivate the power of close and accurate reasoning, by a careful study of model demonstrations. As much original work is required as seems consistent with a satisfactory study of the formal demonstrations outlined in this course.

The course in physics aims to cover all the principal topics in a manner consistent with elementary treatment. An effort is made to avoid the fragmentary view of the subject which would be incident to a purely experimental course of one year, and at the same time to retain

the advantages of laboratory methods. The method of instruction combines quantitative laboratory exercises of which carefully prepared reports are required, with lecture-table demonstrations by the teacher. There are frequent textbook lessons and the necessary recitations and examinations.

The second year's work in English is based upon Lockwood's Lessons in English. This course embraces an outline of the history of the English language and the elementary principles of rhetoric. Compositions form a part of nearly every lesson. The authors studied are Scott, Dickens and Hawthorne.

The work in drawing includes :— Inking with ruling pen and compass pen, shade lines, the standard bolt with formulas, machine drawing, dimensioning and specifying, free-hand outline drawing, mechanical perspective, free-hand perspective from models, free-hand machine drawing, dimensioned constructions, intersection and development of plane surface solids requiring cutting planes, oblique projections and tests. All sheets are executed in ink except those for free-hand and mechanical perspective.

The course in wood turning is preparatory to pattern making, and consists of exercises in measuring with calipers and dividers, and in cylindrical, compound, conical, globe chuck and face plate turning.

The tools used are:— Wood turning lathe, inside calipers, outside calipers, dividers, gouges, chisels, cutting off tool, round nose and diamond point tools, oil stone and oiler.

The pattern making work consists of instruction concerning moulding, draft of patterns, use of shrink rule, core prints, and core boxes ; followed by exercises in laying out patterns, building up cone patterns, jig sawing, and all operations involved in making both solid and split patterns.

The course in forging and blacksmithing is as follows :— Exercises in care of fire, and in drawing, upsetting, bending, riveting, welding, punching, and tempering. Some of the articles made are :— The wedge, square point, sign dogs, stone dogs, S-hooks, bent welded rings, harness hooks, truck hangers, hooks and staples, swivels, shafting keys, shaft with shoulders, bent angle irons for strengthening joints, welded angle irons, chain links, eye bolts and ring, clevice with bolt and cotter, bolts and nuts, square and hexagonal lathe tools, tempered spring, flat drill, hammer, blacksmith tongs, etc.

The tools used are a portable forge, anvil, hand hammer, rule, square, swedges, fullers, set hammer, hot chisel, cold chisel, hardy, outside spring calipers, heading tools, and various tools used in caring for the forge fire.

Third Year.

		Hours per week.	Months per year.
1.	Advanced Algebra	5	6
	Plane Geometry	5	4
2.	Physics	2	10
	Chemistry	3	10
3.	French	5	10
4.	English Language and Literature	3	10
5.	Drawing, (alternate days)	10	5
6.	Machine Shop Work, (alternate days)	10	5

An option is offered between Nos. 1 and 2.

The mathematical work of this year is designed to meet the admission requirements of the Massachusetts Institute of Technology in elementary algebra and plane geometry which include all the topics of academic algebra through geometrical progression, and the first five books of plane geometry. The textbooks used are Bradbury & Emery's Academic Algebra and Wentworth's Elements of Plane Geometry.

The advanced course in physics assumes a knowledge of the elements of the subject in general and such skill in manipulation as may be acquired in the elementary course of the previous year. Special attention is given to the C. G. S. system of units. The course is mainly experimental and includes measurements in the metric units of length, mass, and volume; investigation of such laws as those governing the elasticity of wooden rods under flexure or torsion; the determination of such values as the breaking strength of wire, the coefficient of expansion of metals, the latent heat of water and steam, specific heat of metals, and the electrical resistance of wires both by substitution and by the bridge method. The advance is in the line of more accurate methods of experimenting rather than in new subjects.

The course in French covers Otto's French Grammar, Part 1, and the translation of Worman's Premier Livre, Peppino, Les Récits de la Vieille France, Le Pacte de Famine, and Le Siège de Berlin. There is much translation of English into French either orally or at sight, or in the form of written exercises prepared during the study period, or in class under the supervision of the teacher.

The English of this year includes daily themes and the reading of selections from standard authors.

The course in chemistry consists of 40 laboratory exercises and 80 recitations or lectures. The experimental work includes 50 of the 100 experiments prescribed by the Committee of Ten. The topics are:—Oxygen, nitrogen, hydrogen, carbon, acids, bases, salts, oxides of nitrogen, oxides of carbon, chlorine, bromine, iodine, sulphur, phosphorus, arsenic, silicon, glass, atmosphere, water, flame, calcium, magnesium, aluminum, zinc, lead, tin, mercury, silver, iron, illuminating

gas, alcohol, bread, soap, Dalton's laws, Gay Lussac's and Avogadro's law with problems.

The course in drawing is as follows :— Projections ; measurements of inclined lines with applications; geometrical constructions such as mathematical curves, the helix with applications to screws, theory of conic sections, intersection and development of solids bounded by curved surfaces requiring the cutting plane; theory and execution of the spur gears; machine drawing (detail and assembled), specified and dimensioned for use.

Each student is treated as an assistant draughtsman in a large office. A complete machine is selected and each assistant draughtsman is given an idea of some part which he must develop, and of which he must produce a correct working drawing. At least two parts are thus treated, and each student makes two or more tracings of sheets not his own. From these he makes blue prints on paper prepared by the class. The total time in the drawing office is about seventy hours.

The machine shop course for both third and fourth year consists of lathe work, including the preparation of work for the lathe, straight and taper turning, boring, chuck drilling, reaming, screw cutting, uses of boring bar, compound rest, taper attachment and fine measuring tools, planing on planer and shaper, milling, drilling, and boring in drill press, forming and grinding cutting tools, construction and assembling of machines and the use of special tools.

The tools used are those of the first year, and also the engine lathe, planer, shaper, milling machine, upright drill, sensitive drill, emery grinder, drills, reamers, arbors, taps, lathe dogs, and tools of every variety needed to complete a given piece of work.

Throughout the entire course the pupils in each shop work from prepared blue prints giving details and specifications of the work or from drawings specially prepared by themselves.

Fourth Year.

	Hours per week.	Months per year.
1. Solid Geometry and Reviews in Mathematics .	5	10
2. Chemistry or Botany	5	10
3. English Language and Literature and U. S. History	3	10
4. French	5	10
5. Drawing, (alternate days)	10	5
6. Machine Shop Work, (alternate days)	10	5

An option is offered between Nos. 1 and 2.

The work of the class in advanced mathematics has been divided between advanced algebra and solid geometry three days of each week having been given to algebra and two to geometry during the fall and

winter terms. The latter months of this year are spent in the necessary reviews in mathematics for the entrance examinations of the Lawrence Scientific School and the Massachusetts Institute of Technology.

The work in English and history for the advanced class follows the entrance requirements of the Institute of Technology and the Lawrence Scientific School. In English the books agreed upon by the colleges are read, and much written work is required. In history the class follows Johnston's *United States*, but this book furnishes only a small part of the work done. From topics assigned with references to larger historical works a thorough study is made of the more important phases of American history; essays are written upon the lives of our great statesmen and different historical movements; and something is attempted in the way of individual and voluntary study of some epoch or event. The English history, required for entrance to the Lawrence Scientific School, will receive some portion of the time devoted in this course to history.

The drawing in the regular course consists of machine mechanism, belting principles; bevel gears (elective), worm gears, rack and pinion (elective), assembling a machine from details (elective), projection and cast shadows; isometric projection and shadows; use of color washes and tints.

The student may, if he desires, substitute the following for the drawing marked "elective,"—architectural details, as sections through a building, window casings, inside and outside finish and decorations, etc., and the plans and elevations of at least two houses.

For the Institute section the course is as follows:—Orthographic projections and shadows with color washes and tints, isometric projection, simple and complicated shadows, isometric intersections, etc., and descriptive geometry.

For machine shop work see the paragraphs at the end of third year.

A series of physical exercises is maintained throughout the four years, including military drill in the school of the soldier, without arms, under Capt. Lombard, and fire and emergency drill under the immediate direction of Superintendent Ellis.

The time devoted to these physical exercises is about four hours per week during the first year, three hours per week during the second year and two hours per week during the third and fourth year. A part of this time is taken from that assigned to shop work, but somewhat more than half of it is required in addition to the regular school hours.

Emergency lectures by a competent surgeon form a part of

the work of the first year. The textbook used is Morton's Handbook of First Aid to the Injured.

A full military band of forty-two pieces is organized from members of the school, and rehearsals are held weekly.

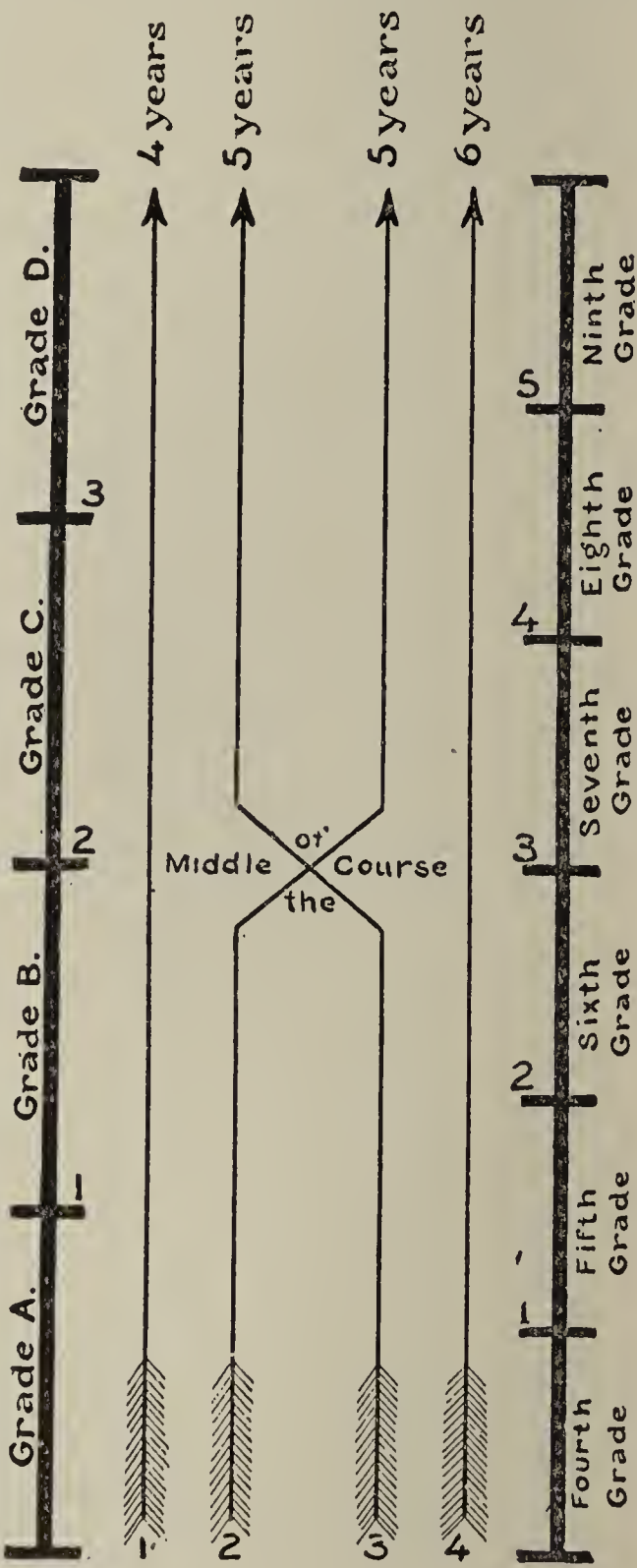
Two regular exercises per week in singing are maintained for the entire school, and a glee club of twenty-four picked voices receives additional instruction under Mr. Briggs.

COURSE OF STUDY FOR THE CAMBRIDGE GRAMMAR SCHOOLS.

The course of study is divided in two ways : (1) into six sections ; (2) into four sections ; each section covering a year's work. Pupils pursuing the six years' course are classified in six grades, called the fourth, fifth, sixth, seventh, eighth, and ninth grades. Those pursuing the four years' course are classified in four grades, called grades A, B, C, and D. When pupils are promoted to the grammar schools they will begin the first year's work together. After two or three months they will be separated into two divisions, but they will remain in the same room under the same teacher.

One division will advance more rapidly than the other, and during the year will complete one-fourth of the whole course of study. The other division will complete one-sixth of the course.

During the second year the pupils in grade B should be in the same room with the sixth grade. At the beginning of the year they will be five



Arrow No. 1 indicates the 4 years' course ; grades A, B, C, D. Arrow No. 2 indicates one of the 5 years' courses ; grades A, B, 7, 8, 9. Arrow No. 3 indicates the other 5 years' course ; grades 4, 5, 6, C, D. Arrow No. 4 indicates the 6 years' course ; grades 4, 5, 6, 7, 8, 9.

months (one-half the school year) behind those in the sixth grade. After two or three months grade B will be able to recite with the sixth grade, and at the end of the year both divisions will have completed one-half the course of study — the one in two years and the other in three years. The plan for the last half of the course is the same as for the first half, the grades being known as C and D in the four years' course, and as the seventh, eighth, and ninth in the six years' course.

There are also two ways of completing the course in five years: (1) any pupil in the four years' course may at the end of two years be transferred to the seventh grade, and finish the course in three years; (2) any pupil in the six years' course may at the end of three years be transferred to grade C, and finish the course in two years. In both cases these changes can be made without omitting or repeating any part of the course.

READING.

Fourth Grade and Grade A. Fables and Folk Stories, Hans Andersen's Stories, and one or more of the authorized Readers. Selections of poetry and prose (minimum number of lines, 100) are to be committed to memory and recited, not in concert only, but by each pupil; also to be written frequently from memory.

Additional for Grade A. Robinson Crusoe, Ruskin's King of the Golden River, and selections from the authorized Readers of the fifth grade.

Fifth Grade. Robinson Crusoe, Ruskin's King of the Golden River, and one or more of the authorized Readers. Selections of poetry and prose (minimum number of lines, 150) are to be committed to memory and recited, not in concert only, but by each pupil; also to be written frequently from memory.

Sixth Grade and Grade B. Hawthorne's Little Daffydowndilly and Biographical Stories, Longfellow's The Children's Hour, Eggleston's First Book in American History, and one or more of the authorized Readers. Selections of poetry and prose (minimum number of lines, 200) are to be committed to memory and recited, not in concert only, but by each pupil; also to be written frequently from memory.

Seventh Grade and Grade C. Hawthorne's Wonder Book, Higginson's Young Folks' History of the United States, and selections from the authorized Readers. Selections of poetry and prose (minimum number of lines, 200) are to be committed to memory and

recited, not in concert only, but by each pupil ; also to be written frequently from memory.

Additional for Grade C. Burrough's Birds and Bees, Hawthorne's Grandfather's Chair and Tanglewood Tales. The last two books may be read at home, the pupils being required to give an account of them, both oral and written, at school.

Eighth Grade. Burrough's Birds and Bees, Hawthorne's Grandfather's Chair and Tanglewood Tales. Selections of poetry and prose (minimum number of lines, 200) are to be committed to memory and recited, not in concert only, but by each pupil ; also to be written frequently from memory.

Ninth Grade and Grade D. Masterpieces of American Literature. Selections of poetry and prose (minimum number of lines, 200) are to be committed to memory and recited, not in concert only, but by each pupil ; also to be written frequently from memory.

Additional Books. Additional books for each class may be obtained under the following order of the committee, adopted May 19, 1887 : " Standard books of English literature may be used in each class of the grammar schools, the choice of books to be made by the master of the school, subject to the approval of the school committee."

REMARKS. All the classes should have frequent exercises for the purpose of training the voice.

It is expected that every pupil will read at home each term one or more books recommended by the teacher.

SPELLING.

Fourth Grade. Harrington's Spelling Book, Part First to page 60.

Grade A. Harrington's Spelling Book, Part First.

Fifth Grade. Harrington's Spelling Book, Part First, and Part Second to page 25.

Sixth Grade and Grade B. Harrington's Spelling Book, Part Second to page 61, and page 91.

Seventh Grade and Grade C. Harrington's Spelling Book, Part Second.

REMARKS. The pupils in each room should be taught to write the names of one another, the name of their teacher, the name of their school, the names of the streets and of the trees in the vicinity of their school, and of the shrubs and flowers in their gardens.

The spelling of the names of cities, states, countries, rivers,

mountains, etc., and of technical words, should be taught in connection with the subjects in which they are used.

The pupils of the sixth, seventh, eighth, and ninth grades should have constant practice in finding the pronunciation and meaning of words from the dictionary.

LANGUAGE.

Fourth Grade and Grade A. Such lessons in Hyde's Practical Lessons in the Use of English for Fourth Year of School as shall be especially helpful in teaching pupils to express their thoughts correctly.

Additional for Grade A. A short composition each week which may be prepared at home.

Fifth Grade. Such lessons in the first half of Southworth and Goddard's First Lessons in Language as shall be especially helpful in teaching pupils to express their thoughts correctly. Give special attention to letter writing.

Sixth Grade and Grade B. Such lessons in Southworth and Goddard's First Lessons in Language as shall tend to awaken and stimulate thought, and be helpful in teaching pupils to write fluently and correctly.

Seventh Grade and Grade C. Parts I. and II. of Tweed's Grammar for Common Schools; also such portions of Hyde's Practical Lessons in the Use of English,* or of Metcalf's Language Exercises as may be helpful in teaching the required subjects in Tweed's Grammar, and especially such portions as will be helpful in teaching pupils to understand and write good English. Continue letter writing, make out bills, and write frequently short compositions on familiar subjects.

Additional for Grade C. A short composition each week which may be prepared at home.

Eighth Grade. Parts III. and IV. of Tweed's Grammar for Common Schools; also such portions of Hyde's Practical Lessons in the Use of English,* or of Metcalf's Language Exercises, as may be helpful in teaching the required subjects in Tweed's Grammar, and especially such portions as will be helpful in teaching pupils to understand and write good English. Continue the written work of the seventh grade.

Ninth Grade and Grade D. Tweed's Grammar for Common Schools; Masterpieces of American Literature. Continue the written work of the seventh and eighth grades.

* Second Book.

REMARKS. Too much time is often given to what may be called the mechanical part of language work. The use of capitals and punctuation marks, and even spelling can be taught equally well, if not better, in connection with what pupils write in giving expression to their thoughts. It should be the aim of teachers to awaken and stimulate thought on the part of their pupils and guide them in giving expression to it. Every lesson should become a language lesson, and drawing as well as the written and spoken word should be used as means of expression.

GEOGRAPHY.

Fourth Grade and Grade A. The topics in Frye's Primary Geography, to page 54.

Additional for Grade A. The topics between pages 54 and 79.

Fifth Grade. The topics in Frye's Primary Geography.

Sixth Grade and Grade B. The prominent physical features of North and South America, and the physical and political geography of the countries of North America.

Additional for Grade B. The unfinished work of the Fifth Grade.

Seventh Grade and Grade C. The prominent physical features of Europe, Asia, Africa, and Australia, and the physical and political geography of the countries of South America and Europe.

Additional for Grade C. The physical and political geography of the countries of Asia, Africa, and Australia.

Eighth Grade. The physical and political geography of the countries of Asia, Africa, and Australia, and a general review of the work of the sixth and seventh grades.

REMARKS. Pupils should be made familiar with geographical terms and definitions as their use is required. At least one-half of the comparatively unimportant parts of the textbook should be omitted.

The following extracts, the first from the report of the "Committee of Ten," and the second from the report of the "Committee of Fifteen," show the lines along which instruction should be given: —

FIRST EXTRACT.

Observational Geography. In the judgment of the Conference, observation should go before all other forms of geographical study, and

prepare the way for them ; its object being (1) to develop the power and habit of geographic observation, (2) to give the pupils true and vivid basal ideas, and (3) to arouse a spirit of inquiry and a thirst for geographical knowledge. This work of observation should begin with those features that lie immediately about the pupils, and so fall easily within the reach of their direct study and ready comprehension. In rural districts, the natural features of the surface will obviously form a large part of the study, while in cities, the artificial features must largely take the place of these. In the one instance, natural geography, as seen in the forms of the land, the hills, valleys, plains, meadows, divides, streams, lakes, etc., will predominate, while in the other, artificial or humanistic geography will receive leading attention, as streets, railways, wharfs, harbors, parks, plots, wards, etc.; but something of both these groups of subjects may be found and utilized in both localities. Neither should be neglected, for the pupils need not only to acquire clear ideas of the things by which they are chiefly surrounded but type ideas of the things which characterize other localities and of which they need to form correct ideas without being able to see them. Observation, however, should not be confined simply to the passive fixed features by which pupils are surrounded. They should observe the agencies that produce surface changes, such as winds, rains, floods, thawing, freezing, cultivation, etc. The temporary streams that follow heavy rains represent on a small scale many of the natural processes by which surface features are produced. From these immediate agencies the observations should extend to the phenomena of the weather and the climate, such as temperature, winds, clouds, seasons, etc. As a step toward the understanding of mathematical geography, so called, the children should be led to observe the shifting of the sun north and south with the seasons, and to measure the amount of this by the length of shadows at noonday in the different months of the year. They should compare these by means of a record kept for the purpose. In like manner, they should observe the movements of the stars and other heavenly bodies. As a step toward the study of the distribution of plants and animals and an insight into their dependence upon temperature, soil, food, etc., the pupils should be encouraged to observe the differences of plants on uplands, lowlands, marshes, etc., and upon sandy, clayey, gravelly or stony ground, and to note the habitual dispersal of animals and insects in the neighborhood, and also their relations to each other, as in forming or frequenting forests, prairies, meadows, etc. As a step toward the study of the human elements in geography, observations should be made upon the population and its distribution, upon home occupations and productions, upon local political boundaries, as wards, school districts, city or town limits, etc., and upon the location of cities, villages, railways, canals, etc. Thus, by a little ingenuity and industry, a large part of the features that

make up the substance of geography in the large sense may be found illustrated close at home, and, if suitably studied, the basis may be laid for clear conceptions of those features which lie beyond the range of the child's observation.

Observation should not only begin the work in geography but should continue throughout the entire course and beyond. If scholars are not educated so as to continually observe geographic features and note their significance whenever they are brought in contact with them, whether during school days or afterwards, the school work fails of its most important possibilities. The pupils' first observational work is necessarily of the simpler and more superficial kind. As knowledge and insight increase, they should see more and more of the geographic phenomena that come before them and see deeper and deeper into their significance and receive increasing pleasure and profit from them. To this end every opportunity for observational work in geography should be eagerly embraced. Excursions for the special purpose should be made as frequently as practicable, formally or informally, in school hours and out of school hours, by classes and by individuals. Advantage should be taken of incidental excursions in which the class or any of its members participate. The little trips and longer travels of members of the class should be taken advantage of. Late in the course, special studies of certain geographic features may be taken up with success and profit.

Representative Geography. Immediately after the making of observations should come their reproduction in the form of descriptions, sketches, maps, models, etc. The instruction of the teacher falls far short of its highest efficiency if the early work is merely observational and receptive. The great end of education is to create productive ability. One important form of this is representative production. Besides having value in itself, the description of features that have been seen and their representation by sketches, maps, or models, reacts upon the observational work and induces a clearness, sharpness, and definiteness that it would not otherwise be likely to take. Not only this, but it leads the scholars to realize what maps, descriptions, etc., really mean. By this means pupils are led up naturally to an ability to read with vividness, ease, and full understanding, the maps and descriptions which constitute the medium of the larger part of their later studies; and such ability to read is of supreme importance in all subsequent work.

Derivative or Descriptive Geography. When pupils have gained true and vivid basal ideas by observation, and have, by reproducing these, acquired a realistic sense of the meaning of maps and an ability to read them, in the full and proper sense of the term, they are prepared to pass on to a formal study of descriptive geography. In this the observational and representative work of others than themselves is

made the basis of study. The pupils are not now studying the earth's surface but "a description of the earth's surface." The work is not direct and immediate, but derivative and secondary. The pupils cannot carry their own observations over more than a very small fraction of the earth's surface, and their work upon even this small portion must, in the nature of the case, be very imperfect. Their great dependence must, therefore, be upon the work of others, the work of geographical experts, and hence descriptive geography must embrace much the largest portion of their attention. The common mistake is that it embraces too nearly all of it, and the observational and reproductive efforts which are necessary to give the study of descriptions its greatest serviceability are neglected. These should be continued throughout the course, running parallel with the descriptive study and supplementing and vivifying it.

SECOND EXTRACT.

Geography is not a simple science by itself, like botany, or geology, or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling-place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoölogy, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature, your Committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is remote and to be studied for its own sake. It is, therefore, a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural difference of climate, and lands, and waters, and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is, therefore, the first central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter-process of civilization which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the

rain distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centres, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production, and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil, and general configuration of land masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of geographical difference quite early in the course of study. Setting out from the idea of the use made of the earth by civilization, the pupil in the fifth and sixth years of his schooling (at the age of eleven or twelve) may extend his inquiries quite profitably as far as the physical explanations of land-shapes and climates. In the seventh and eighth year of school much more may be done in this direction. But it is believed that the distinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events, and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on the opposite side of the globe is followed with more interest in this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization, and their natural advantages for contributing to the world market, is of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era in which public opinion is organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people; they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power, in tracing back toward unity the various series of causes. What educative value there is in geology,

meteorology, zoölogy, ethnology, economics, history, and politics is to be found in the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your Committee is of the opinion that there has been a vast improvement in the methods of instruction in this branch in recent years, due, in large measure, to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds, and straits around the world. He enlivened this, to some extent, by brief mention of the curiosities and oddities in the way of cataracts, water-gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations, and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map drawing. The study of watersheds and commercial routes, of industrial productions and centres of manufacture and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter-process of industry and commerce by which each difference is rendered of use to the whole world, and each locality made a participator in the productions of all.

ARITHMETIC.

Fourth Grade and Grade A. Addition, subtraction, multiplication, and division of whole numbers and of decimals, using no whole number of more than five figures, no divisor of more than three, and no decimal beyond thousandths. In the division of decimals the divisor is to be a whole number. Addition and subtraction of like fractions, and of fractions whose common denominator does not exceed twelve.

Teach the tables of United States Money, Liquid Measure, and Dry Measure, with practical examples in changing numbers of one denomination to the next higher or lower.

Additional for Grade A. Avoirdupois Weight, multiplication and division of fractions, including mixed numbers, also the greatest common factor and the least common multiple of two and three numbers, each less than 100, and cancellation.

Fifth Grade. Addition, subtraction, multiplication, and division of whole numbers, of decimals, and of common fractions, including mixed numbers; also the greatest common factor and the least

common multiple of two and three numbers, each less than 100, and cancellation. No decimal to extend beyond thousandths, no fraction to have a denominator greater than twelve, and no example to contain more than three fractions. In the division of decimals the divisor is to be a whole number.

Teach the table of Avoirdupois Weight, a part of the tables of Long Measure, Square Measure, Cubic Measure (inches, feet, yards), and Time Measure (seconds, minutes, hours, days, weeks), with practical examples in changing numbers of one denomination to the next higher or lower. Percentage with simple practical examples.

Sixth Grade and Grade B. Common Fractions and Decimal Fractions.

Teach the tables of Long Measure, Square Measure, Cubic Measure (inches, feet, yards), Avoirdupois Weight, Liquid Measure, Dry Measure, Time Measure (seconds, minutes, hours, days, weeks), and Miscellaneous Measures, with practical examples in changing a compound number to a simple number of a lower denomination, and a simple number to a compound number of higher denomination. Simple Interest at 6 per cent.

Additional for Grade B. The unfinished work of the Fifth Grade.

Seventh Grade and Grade C. Compound Numbers, including the mensuration of rectangular surfaces and solids; Percentage; Profit and Loss; Commission and Brokerage; Insurance; Taxes; Simple Interest.

Additional for Grade C. Partial Payments; Problems in Interest; Bank Discount; Commercial Discount.

Eighth Grade. Partial Payments; Problems in Interest; Bank Discount; Commercial Discount; Compound Interest; Bonds; Ratio and Proportion.

Ninth Grade and Grade D. Partnership; Involution; Evolution; Square Root; Metric System; Book-keeping, confined to simple personal and business accounts.

Additional for Grade D. The unfinished work of the Eighth Grade.

REMARKS. In teaching these subjects the examples should be of a simple, practical character. Save time by using small numbers. Many of the examples should be made by the pupils. Those in the textbooks are to be used according to the judgment of the teacher. Methods of doing work are more important than the amount of work done. A single example carefully performed, with the reasons for every operation given

either orally or in writing, will do more for the advancement of the pupil than the working of many examples without explanation.

GEOMETRY.

This outline was prepared by Professor Paul H. Hanus, of Harvard University, for the use of the teachers attending his lectures during the school year 1892-93.

To the Teachers:

Geometry has been introduced into the curriculum of the grammar school because of its educational value — because it yields a peculiar and important kind of knowledge, and a highly desirable mental discipline.

To realize this educational value, teachers are reminded of the following principles: —

1. Early instruction in geometry should be object teaching.
2. The pupil should make and keep an accurate record of his observations, and of the definitions or propositions which his examination of the object or objects has developed.
3. In all his work the pupil should be taught to express himself by drawing, by construction, and in words as fully and as accurately as possible. The language finally accepted by the teacher should be the language of the science, and not a temporary phraseology to be set aside later.
4. The pupil is to convince himself of geometrical truths primarily through measurement, drawing, construction, and superposition, not by a logical demonstration. But gradually (especially during the last year of the work), the pupil should be led to attempt the general demonstration of all the simpler propositions.
5. The subject should be developed by the combined effort of teacher and pupil, i. e., the teacher and the pupil are to coöperate in reconstructing the subject for themselves. This is best accomplished by skilful questioning, *without the use of a textbook containing the definitions, solutions, and demonstrations*. The teacher should have a definite outline which may be in the hands of the pupils, but definitions, solutions, constructions, and demonstrations should be wrought out and preserved by the pupils with the teacher's assistance. (It is assumed, of course, that the teacher has many books at hand for personal inspiration, and that he will find in them many exercises which he will adapt to the needs of his classes.)
6. The subject matter of each lesson should be considered in its relation to life, i. e., the actual occurrence in nature and in the structures or machines made by man of the geometrical forms studied; and the

application of the propositions to the ordinary affairs of life should be the basis and the outcome of every exercise. In other words the pupil should not only acquire knowledge and skill, but he should learn to apply them. To this end many exercises for practise are necessary, and field work and excursions to shops and factories are well nigh indispensable.

7. Accuracy and neatness are absolutely essential in all the work done by the pupils.

Apparatus. Each pupil needs a pencil, a note-book (letter size), divided scale, compasses and protractor. The school should have a chain or steel tape for measuring distances in the field, a yard measure and a meter measure for measuring lengths indoors, and all the other apparatus needed for the outlines which follow. Each school system or district should also have a surveyor's compass for measuring angles in the field. A very simple goniometer could be made by skilful pupils by mounting on a tripod a circular graduated board about a foot in diameter, having a movable arm turning on a pivot at the centre of the board. By sighting along this movable arm the direction of a given line is determined, then after moving the arm until the line of sight falls in the other side of the angle to be measured, this angle can, of course, be read off on the graduated circular board.

Grade C and the Eighth Grade.

INTRODUCTION.

1. What we study in Geometry. (*The form and size of bodies and of their boundaries and edges.*)

2. *Space.* Bounded portion of space is a geometrical body. A geometrical body has only two properties, viz.: *shape* or *form*, and *size* or *magnitude*. Dimensions of a body. Cube, Prism, Pyramid, Cylinder, Sphere. Occurrence of each in nature and in the structures made by man. Geometrical bodies are called solids.

3. *Surfaces.* *Boundaries of solids.* 1. Plane or flat. 2. Curved. Dimensions of a surface.

4. *Lines.* 1. Edges of solids. 2. Boundaries of surfaces. 3. Intersections of surfaces. Lines are straight or curved. Dimensions of a line.

5. *Points.* 1. Corners of solids. 2. Ends of lines. 3. Intersections of lines. 4. Designate a place. Representation to the eye of point, line, and surface.

PART I. PLANE GEOMETRY.

We shall now take these surfaces, lines, and points away from the solids to which they belong, put them into or on a single plane, and

study their properties without considering the solids from which they were obtained.

Pencil point marks a point on paper. Moving point traces a line. Line moving not in direction of its length traces surface.

I. Lines.

Kinds of lines. 1. Straight; test of straightness. 2. Curved. 3. Broken. 4. Mixed or composite. Drawing and reading a line. Two points determine the position of a line.

A. STRAIGHT LINES.

1. *Shortest distance between two points. How many straight lines can be drawn between two points?*

2. *Directions of a straight line* (vertical, horizontal, oblique).

3. *Position of straight lines with respect to each other.* 1. Same direction. 2. *Parallel lines* also said to have the same direction. Through a given point to draw a line parallel to a given line (with triangle and ruler). 3. Lines having different directions.

B. CURVED LINES.

Recall definition of curved line. Commonest curve is *circumference of circle*. Occurrence in nature and in structures made by man. How to draw circle. *Centre, Radius, Diameter, Arc, Chord, Tangent. Concentric Circles. Tangent and Intersecting Circles.*

Relation of diameter to circumference (to be determined empirically). Pupils measure both the diameter and the circumference in each case, and are led to see that circumference is approximately 3.14 times diameter.

To bisect a straight line.

To divide a straight line into any number of equal parts.

Measurement of straight lines. Units of length. Description and use of surveyor's chain and tape.

Drawing of measured lines. Drawing to scale. Scale of reduction. Reducing factor.

II. Angles.

1. *Definition. Terms needed. Reading an angle.*

2. *Magnitude and kinds. A degree.*

3. *The protractor* and its uses — to measure angles; to lay off angles.

4. *Equal angles.* Construction of an angle equal to a given angle. Sum and difference of angles.

5. *Groups of angles.* (a) About a common vertex — 1, adjacent; 2, supplementary adjacent; 3, sum of all the angles about a point. (b) Opposite angles. (c) Angles made by transversal and parallels — 1, exterior-interior; 2, alternate-interior; 3, sum of interior non-adjacent. Applications.

III. Rectilinear Figures.

A. TRIANGLES.

1. *Occurrence. Definition. Terms used* (sides, base, altitude, vertex).

2. *a. Kinds* (scalene, isosceles, equilateral, equiangular, acute, obtuse, right). *b. Sum of two sides compared with third side.*

3. *Important properties.*

a. Sum of angles of a triangle. Corollaries. (What is a corollary?) Exterior angle.

b. Triangles (or other figures) may be equal or equivalent or similar.

c. Equal triangles; 1, if two sides and included angle of one triangle; or, 2, if a side and two angles of one triangle; or, 3, if the three sides of one triangle are equal to the three sides of another triangle. Applications in each case.

d. Angles at the base of an isosceles triangle. Corollaries.

e. Converse of last proposition. (What is a proposition?)

f. Position of vertex of isosceles triangle with respect to middle point of the base.

g. Two isosceles triangles having a common base. Constructions — 1. To bisect a given line. 2. To bisect a given angle. 3. From a given point to let fall a perpendicular upon a given line.

h. Relation of sides to opposite angles in any triangle, and conversely.

i. Only one perpendicular can be drawn from a point to a line. The perpendicular is the shortest distance from a point to a line, and measures that distance.

Ninth Grade.

B. QUADRILATERALS AND OTHER POLYGONS, AND THEIR MOST IMPORTANT PROPERTIES.

1. *Occurrence and kinds of quadrilaterals. Terms used.*

2. *Important properties common to all parallelograms.*

a. Sum of any two consecutive angles.

b. Diagonal divides parallelograms into two equal triangles.

c. Opposite sides are equal.

d. Opposite angles are equal.

e. Diagonals bisect each other.

If the opposite sides of a quadrilateral are equal, the figure is a parallelogram.

3. *The Trapezoid.*

a. Construct trapezoids of different shapes.

b. Sum of two angles adjacent to a non-parallel side.

c. In isosceles trapezoid angles adjacent to same parallel.

d. Diagonal divides trapezoid into two unequal triangles.

e. Median line; one-half the sum of bases.

4. *Polygons.*

a. In general. Regular polygon. Diagonals: Number of different diagonals.

b. Sum of interior angles of a polygon.

c. Centre of regular polygon. Angle at centre.

d. Construction of regular polygons.

1. Using protractor and angle of polygon.

2. Using angle at centre.

3. Without protractor — consider only regular hexagon.

C. AREAS.

1. Units of area.

2. How to find the area of (*a*) a square; (*b*) a rectangle; (*c*) a parallelogram.

3. How to find the area of a triangle.

4. Comparison of different triangles having equal bases and equal altitudes.

5. How to find the area of a trapezoid.

6. How to find the area of any polygon.

7. How to find the area of a regular polygon.

8. Two simple exercises in the subdivision of areas.

a. To divide a triangle into five (any number of) equivalent parts by lines drawn from the vertex.

b. To divide a parallelogram into five (any number of) equivalent parts by lines drawn parallel to one side.

D. THE PYTHAGOREAN PROPOSITION.

1. In the case of the isosceles right triangle.

2. In the case of the scalene right triangle whose sides are to each other as 3 to 4.

3. In general.

4. Applications.

E. SIMILAR FIGURES, MORE ESPECIALLY SIMILAR TRIANGLES.

1. By comparing two similar figures show that — (*a*) Similar figures have the same number of sides. (*b*) In two similar figures each angle of one has a corresponding equal angle in the other. (*c*) In two similar figures corresponding (homologous) sides have a constant ratio.

2. Two triangles are similar if two angles of one are equal to two angles of the other.

3. The areas of two similar triangles have the same ratio (are to each other) as the squares of their homologous sides.

4. Applications to finding heights and distances.

IV. Curvilinear Figures.

A. THE CIRCLE.

1. Definitions. (*a*) Review properties already considered. (*b*) Angle at centre and inscribed angle: Sector; Quadrant; Segment.

2. The situation of the centre of a circle with respect to the perpendicular to a chord at its middle point. (*a*) To find the centre of a circle or arc. (*b*) To draw a circle through three given points.

3. (*a*) The distances of equal chords from the centre of the circle. (*b*) The distances of unequal chords from the centre of the circle.

4. Equal chords correspond to equal angles at the centre.

5. The chord of 60° compared with the radius. To inscribe a regular hexagon in a circle.

6. An inscribed angle is measured by half the intercepted arc. Size of an angle inscribed in a semicircle.

7. Position of tangent with respect to radius drawn to point of contact.

(*a*) To draw a tangent to a circle at a given point on the circumference. (*b*) To draw a tangent to a circle from a given point without the circle. (*c*) To inscribe a circle in a triangle.

8. How to circumscribe a regular polygon about a circle.

9. How to inscribe a circle in a regular polygon, and how to circumscribe a circle about a regular polygon.

THE AREA OF THE CIRCLE.

1. The area of the circle equals about 3.14 times the square of the radius, or briefly $A=3.14 r^2$, in which A stands for the area of the circle, r for the radius.

This truth can be approximately seen by the pupils with the aid of a figure or model to be supplied by the teacher.

2. Area of a circular ring; of a sector; of a segment.

RELATION OF TWO CIRCUMFERENCES AND OF TWO CIRCLES TO EACH OTHER.

1. Two circumferences bear the same ratio to each other as their radii.
2. Two circles bear the same ratio to each other as the squares of their radii.

B. THE ELLIPSE.

1. (a) Occurrence in nature and in structures made by man. (b) *Conic sections*. (c) To draw an ellipse.
2. Properties. Major axis; minor axis; eccentricity. Foci. *A radius vector*.
3. (a) The sum of the radii vectores for all points is constant, and equal to the *major axis*. (b) The radius vector drawn to either end of the minor axis is equal to half the major axis.
4. Constructions. (a) To draw an ellipse when the axes are given. (b) To draw an ellipse when one axis and the eccentricity are given.

PHYSICS.

The following outline of the work in physics was arranged by Professor Edwin H. Hall, of Harvard University.

It is in the main a selection from the experiments performed by the teachers during the school year 1892-93, under the instruction of Professor Hall. It will be seen that the list does not contain any exercise in Heat, Sound, Electricity, or Magnetism. Professor Hall explains this by saying: "It is my opinion at present that laboratory work in these divisions of physics is too difficult or too expensive for grammar school classes."

LIST OF EXPERIMENTS.

1. *Volume of a solid by overflow of water* from a vessel filled before the immersion of the solid.
2. *Weight of a cubic centimeter of wood* by measuring and weighing a block of rectangular or other convenient shape.
3. *Weight of water displaced by a floating body compared with weight of the body*.
4. *Demonstration of the principle of Archimedes*.
5. *Specific gravity of a solid that sinks in water*.
6. *Specific gravity of wood by immersion with a sinker in water*.

7. *Specific gravity of wood by flotation.*
8. *Specific gravity of a liquid by specific gravity bottle.*
9. *Specific gravity of a liquid by loss of weight of a solid immersed therein.*
10. *The straight lever.*
11. *Experiment upon the centre of gravity of an irregular body, and the influence of its weight when it is used as a lever.*
12. *Laws of the simple pendulum.*
13. *Images in a plane mirror.*
14. *Index of refraction of water.*
15. *Focal length of a lens.*
16. *Law of conjugate foci of a lens.*
17. *Shape of the image (real) of a straight object as formed by a simple lens.*
18. *Parallelogram of forces.*
19. *Experiments upon friction; influence of area of contact and influence of pressure.*
20. *Images in a cylindrical mirror.*

HISTORY.

Sixth Grade and Grade B. Eggleston's First Book in American History used as a reading book.

Seventh Grade and Grade C. Higginson's Young Folks' History of the United States, used as a reading book.

Eighth Grade and Grade C. The first twelve chapters of Fiske's History of the United States.

Ninth Grade and Grade D. Thomas's History of the United States.

For methods of teaching history, see the report of the Committee of Ten, and the report of the Committee of Fifteen.

For All the Grades.

Physiology and Hygiene. Give instruction in these subjects in accordance with the requirements of the Commonwealth.

The law is as follows: "Physiology and Hygiene, which, in both divisions of the subject, shall include special instruction as to the effects of alcoholic drinks, stimulants, and narcotics on the human system, shall be taught as a regular branch of study to all pupils in all schools supported wholly or in part by public money."

Moral Instruction. The duty of every teacher is clearly defined by the following extract from the laws of our Commonwealth: —

“ It shall be the duty of all instructors of youth to exert their best endeavors to impress on the minds of children and youth, committed to their care and instruction, the principles of piety and justice, and a sacred regard to truth; love of their country, humanity, and universal benevolence; sobriety, industry, and frugality; chastity, moderation, and temperance; and those other virtues which are the ornament of human society, and the basis upon which a republican constitution is founded; and it shall be the duty of such instructors to endeavor to lead their pupils, as their ages and capacities will admit, into a clear understanding of the tendency of the above-mentioned virtues, to preserve and perfect a republican constitution, and secure the blessings of liberty, as well as to promote their future happiness, and also to point out to them the evil tendency of the opposite vices.”

Patriotic Songs. Teach the following songs: America; The Star Spangled Banner; Hail Columbia; Our Flag is There; The Red, White, and Blue; The Battle Hymn of the Republic; Home, Sweet Home.

REMARK. Each pupil should be able to repeat and write the words. It is recommended that in singing America the pupils always rise.

Physical Exercises. The requirements are as follows: “ Midway in each school session five minutes shall be devoted to physical exercises; these shall occur at the same time throughout the building and meanwhile the schoolrooms shall be thoroughly ventilated.”

The Ling system of Swedish gymnastics is to be used in the fourth, fifth, and sixth grades.

Music. See directions of the Director of Music.

Drawing. See directions of the Director of Drawing.

Penmanship. Each master will select from the authorized list the books for his own school.

SEALS OF THE STATE, CITY, AND HARVARD COLLEGE.

Teach the inscription and motto on the State seal, the City seal, and the seal of Harvard College.

Official description of the State seal. The great seal of the Commonwealth shall be circular in form,



and shall bear upon its face a representation of the arms of the Commonwealth, with an inscription round about such representation, consisting of the words "SIGILLUM REIPUBLICÆ MASSACHUSETTENSIS;" but the colors of such arms shall not be an essential part of said seal, and an impression from an engraved seal according to said design, on any commission, paper, or document of any kind,

shall be valid to all intents and purposes, whether such colors, or the representation of such colors by the customary heraldic lines or marks, be employed or not.

The arms of the Commonwealth shall consist of a shield, whereof



the field or surface is blue, and thereon an Indian dressed in his shirt and moccasins, holding in his right hand a bow, in his left hand an arrow, point downward, all of gold; and in the upper corner above his right arm a silver star with five points. The crest shall be a wreath of blue and gold, whereon is a right arm bent at the elbow, and clothed and ruffled, the hand grasping a broadsword, all of gold. The motto shall be "ENSE PETIT PLACIDAM SUB

LIBERTATE QUIETEM."

INSCRIPTION (translated): Seal of the Commonwealth of Massachusetts.

MOTTO (translated): With the sword she seeks calm peace under liberty; or, With the sword she seeks peaceful quiet with freedom; or, With the sword she seeks the tranquil peace of freedom.

Official description of the City seal. The following shall be the device of the seal of the city, to wit: In the centre thereof, a shield, bearing upon it a view, in distant perspective, of Cambridge and Boston, united by a bridge; on the extreme left, the towers of Gore Hall, and on the extreme right, the dome of the State House, to indicate the two places; under the shield the inscription shall be



“CANTABRIGIA CONDITA A. D. 1630:
CIVICO REGIMINE DONATA A. D. 1846.”

Around the seal, as the city motto, shall be the words,

“LITERIS ANTIQVIS NOVIS INSTITVTIS DECORA.”

INSCRIPTION (translated): Cambridge founded A. D. 1630. Made a city A. D. 1846.

MOTTO (translated): Adorned with ancient letters and new institutions.

Official description of the College seal. Arms Gules; three open books Argent, edges covers and clasps Or; on the books the letters VE RI TAS Sable. The seal contains a shield with the arms placed on a circular field Or, on which the words CHRISTO ET ECCLESIAE Azure; and around the words SIGILLVM ACADEMIAE HARVARDIANAE IN NOV ANG.



INSCRIPTION (translated): Seal of Harvard College in New England.

MOTTO (translated): Truth. To Christ and the Church.

Textbooks in the Grammar Schools.

Reading Books. Appleton's; Barnes's; Franklin; Harper's; Lippincott's (old and new series); McGuffey's; Sheldon & Co.'s; Stickney's; Swinton's; American Prose; Birds and Bees; Hiawatha; Evangeline and Snow-Bound; Eggleston's First Book in American History; Gilman's Historical Readers; Lessons on Manners; Selections from the Sketch Book; Hawthorne (American Classic Series); Tanglewood Tales; Grandfather's Chair; Wonder Book; Little Daffydowndilly; Sea-side and Way-side; Wood's Natural History Readers; King's Picturesque Geographical Reader No. 1; Hans Andersen's Stories; Robinson Crusoe; The King of the Golden River; The Children's Hour; Masterpieces in American Literature.

Dictionaries. Worcester's Comprehensive; Worcester's New School. For reference, Worcester's and Webster's Unabridged, and Webster's International.

Arithmetics. Bradbury's Eaton's Practical; Colburn's First Lessons; Seaver and Walton's Mental; Franklin (Cambridge Ed.).

Book-keeping. Meservey's Single Entry.

Geographies. Swinton's Grammar School; Frye's Primary.

Geometry. Hill's Lessons for the Use of Beginners.

Histories. Fiske's; Higginson's and Thomas's.

Language. Hyde's Practical Lessons in English; Metcalf's Language Exercises; Southworth and Goddard's First Lessons in Language; Tweed's Grammar for Common Schools.

Music. Carey's Graded Exercises; National New Second, New Third, and New Fourth Readers; Whiting's Sixth Reader; Mason's New National Music Charts.

Spelling Books. Harrington's; Metcalf's.

Copy Books. Appleton's; Business Standard; Common Sense (vertical); Duntonian; Harper's; Payson, Dunton, and Scribner's.

Drawing Books. Prang's Complete Course.

COURSE OF STUDY FOR THE CAMBRIDGE PRIMARY SCHOOLS.

READING.

FIRST YEAR — FIRST GRADE.

(1) Teach reading at first from the blackboard, using short sentences expressing in the pupils' own words thoughts suggested to them by observation and conversation. (2) As soon as the pupils understand that written or printed sentences stand for thought, teach them to recognize the words of the sentences, and then the sounds and letters composing those words. (3) After the first three months of school life, use the authorized reading books for the first grade. (4) Teach a few pieces of standard poetry, also quotations and maxims, as a part of the regular exercises, and copy what is taught each term into a blank book.

REMARKS. (1) Pleasant conversational tones should be cultivated in the pupils in speaking to one another, and the same tones should be used in their reading. (2) "To give ease and naturalness, nothing is more important than to read in phrases. Thus, 'I can see,' should be spoken as fluently as if it were one word, like 'repartee.'" (3) The articles *a* and *the* should be joined to the following word, as if they formed the first syllable of it." (4) The pupils should be so guided as gradually to gain the power of making out the words of a sentence and of getting its thought. (5) A portion of the time devoted to reading should be set apart for reading aloud by the teacher. Standard literature suited to the capacity of the pupils should be used.

SPELLING AND DICTATION.

FIRST YEAR — FIRST GRADE.

(1) Give the pupils careful, persistent drill in analyzing the spoken word into its elementary sounds, and the written word

into the letters or combinations of letters representing those sounds. (2) By the beginning of the spring term let the pupils write words and short sentences from dictation. (3) Lead them to observe (*a*) that the first word of every sentence begins with a capital letter; (*b*) that the word, I, is a capital letter; (*c*) that the names of persons, days of the week, and months of the year begin with capital letters; (*d*) that a period is placed after every complete statement; (*e*) that every question is followed by a question mark. (4) Teach the use of the apostrophe when it denotes possession. (5) Teach the names and sounds of all the letters before the close of the year.

REMARKS. (1) Pupils should have much practice in the use of letter tablets in word and sentence building. (2) The spelling of words from memory should not be required until pupils can spell them readily at sight and point to each letter as it is named. (3) The sentences used for the spelling and dictation lessons should contain words selected from the other lessons of the day. (4) The work in dictation should be the means for teaching the technical part of written language. (5) This technical work should include, among other exercises, the copying of sentences from the reading book, blackboard, or cards; the writing of sentences dictated by the teacher; and the writing of sentences containing certain words specified by the teacher, the spelling of which has already been taught.

WRITING.

FIRST YEAR — FIRST GRADE.

(1) Teach the forms and names of the letters and the Arabic numerals in the order given in Harper's Writing Manual. (2) In addition to the practice in writing the letters separately, let the pupils copy words and sentences from the blackboard and from cards. (3) Teach them to write their own names, first copying them from cards, later writing them from memory.

REMARKS. (1) At first pupils should write upon a well-ruled slate* with a long, well-sharpened pencil; later, they should use paper and pencil. (2) From the beginning give attention to the form, size, and slant of letters, and as soon as possible to

* Beginning with September, 1895, paper will be used instead of slates.

spacing (distance apart). (3) Careful attention should be given to the writing position, and it should be required so far as possible in all written work. (4) During each writing lesson much time should be spent in examining each pupil's work, giving the needed suggestions. (5) The small letters, the capital letters, and the Arabic numerals should be upon the blackboard at all times.

NUMBER.

FIRST YEAR — FIRST GRADE.

Teach the numbers from 1 to 10 inclusive.

Adding and subtracting with objects :

a. Without figures.

b. With figures.

Multiplying and dividing with objects :

a. Without figures.

b. With figures.

Teach the equal fractional parts of the numbers taught by means of objects.

Give much practice in adding short columns of figures, the sum not to exceed 10 ; verify by subtraction.

Let the numbers be written in words.

Teach the Roman numerals to 10.

Teach the pupils to divide an object into halves, thirds, and fourths ; and to combine halves, thirds, and fourths to form the whole again.

Teach the one-cent and two-cent pieces, the nickel and the dime, and give practice in the use of toy money. Teach the number of pints in a quart, days in a week, and months in a year.

Use the Cambridge Number Cards : — First Year's Work.

A variety of easy problems should be invented by both teacher and pupils in connection with the work in number.

READING.

SECOND YEAR — SECOND GRADE.

(1) Use the authorized reading books for the second grade.

(2) Teach a few pieces of standard poetry, also quotations

and maxims, as a part of the regular exercises, and copy what is taught each term into a blank book.

REMARKS. (1) See remarks for the first grade. (2) The blackboard should be in constant use. Each day the pupils should find upon it new reading matter—some interesting fact, an example in number, a story, a question, or a direction. (3) To train pupils to get the thought as they read, they should be questioned upon the text, and be required to give in their own words the substance of the story read. (4) Pupils should be allowed to read frequently without correction or comment on the part of the teacher. (5) The reading of poetry should not be omitted. (6) A portion of the time devoted to reading should be set apart for reading standard literature suited to the capacity of the pupils. A part of this should be done by the pupils, the selections being simple enough to be read without hesitation, “interesting enough to keep the attention of the class, and valuable enough to be worthy of becoming a permanent possession of the children’s minds.” (7) Pupils should have practice in the elementary sounds of the consonants and consonant combinations, separately and in combination with the vowels. This will help to secure good tone and correct pronunciation, and will enable them to find out words for themselves.

SPELLING AND DICTATION.

SECOND YEAR — SECOND GRADE.

(1) Continue phonic analysis, and oral spelling of words by letter, also the writing of words and sentences from dictation. (2) Review the use of capital letters given for the first grade. (3) Lead the pupils to observe (*a*) that the word *O*, is a capital letter; (*b*) that the first word of every line of poetry begins with a capital letter; (*c*) that the names of countries, cities, or towns, schools, streets, squares, parks, states, and holidays begin with capital letters. (4) Review the use of the period given for the first grade, and teach that every abbreviation should be followed by a period. (5) Review the use of the question mark. (6) Review the use of the apostrophe to

denote possession, and teach its use in contractions. (7) Teach the arrangement of work upon slate or paper. (8) Teach the abbreviations *Mr.*, *Mrs.*, *Ans.*, *A. M.*, and *P. M.* (9) Pupils should know the alphabet before the close of the year.

WRITING.

SECOND YEAR — SECOND GRADE.

(1) Continue the practice in writing the letters separately, also in making the Arabic numerals, and in copying words and sentences from the blackboard, cards, and books. (2) Let the pupils write their own addresses and the name of their teacher and of their school.

REMARKS. See remarks for the first grade.

NUMBER.

SECOND YEAR — SECOND GRADE.

Review the work for the first grade.

Teach addition and subtraction, multiplication and division of numbers to 50, no multiplier or divisor greater than 12 required. The numbers to 20 should be taught objectively.

Teach the equal fractional parts of numbers to 50. The fractional parts of the numbers to 20 should be taught objectively.

Give much practice in rapid work, especially the addition of short columns of figures. Verify the work in addition by subtraction.

Let the pupils write in words and in figures the numbers to 50.

Teach the Roman numerals to 50.

Add by twos, threes, fours, etc., to 50; subtract by twos, threes, fours, etc., from 50.

Continue the work in the invention of problems by both teacher and pupils.

Teach operations in addition, subtraction, multiplication, and division to 50, one of the numbers being greater than 10, the other 10 or less than 10.

Teach the number of dimes and of cents in a dollar, and con-

tinue the use of toy money. Teach the number of quarts in a gallon, quarts in a peck, pecks in a bushel, and units in a dozen.

Use Cogswell's Lessons in Number.

READING.

THIRD YEAR — THIRD GRADE.

- (1) Use the authorized reading books for the third grade.
- (2) Teach a few pieces of standard poetry, also quotations and maxims, as a part of the regular exercises, and copy what is taught each term into a blank book.

REMARKS. (1) See remarks for the second grade. (2) Occasionally assign a piece to be read silently; and, without having it read orally, require pupils to give in their own words the substance of what they have read.

SPELLING AND DICTATION.

THIRD YEAR — THIRD GRADE.

- (1) Review the work for the previous grade.
- (2) Continue phonic analysis and oral spelling of words by letter, also the writing of words and sentences from dictation.
- (3) Before the close of the year the pupils should know the Alphabet Song as arranged by the director of music.

WRITING.

THIRD YEAR — THIRD GRADE.

- (1) Continue the work as suggested for the second grade.
- (2) Let the pupils write their own addresses, the name of their teacher and of their school, and the names of other pupils in the class.

REMARKS. See remarks for the first grade.

NUMBER.

THIRD YEAR — THIRD GRADE.

Review the work for the second grade.

Teach addition and subtraction, multiplication and division

of numbers to 144 inclusive, no multiplier or divisor greater than 12 required.

Teach the equal fractional parts of numbers to 144 inclusive, using no fraction smaller than $\frac{1}{12}$.

Continue the practice in rapid work, especially the addition of columns of figures, and aim to secure accuracy as well as rapidity. Verify the work in addition by subtraction.

Add by twos, threes, fours, etc., to 100 ; subtract by twos, threes, fours, etc., from 100.

Teach easy problems involving the different combinations and separations taught.

Let the pupils write numbers in words and in figures to thousands ; also let them perform simple examples in addition, subtraction, multiplication, and division.

Continue the work in the invention of problems by both teacher and pupils.

Teach Roman numerals to 100.

Teach the number of gills in a pint, ounces in a pound, seconds in a minute, minutes in an hour, hours in a day, days in a common year, inches in a foot, feet in a yard, square inches in a square foot, and square feet in a square yard.

Give exercises in buying and selling and making change, telling the time of day, and weighing and measuring.

Use Cogswell's Lessons in Number.

LANGUAGE.

ALL THE GRADES.

(1) Give pupils daily practice in speaking and writing their own thoughts, in order that they may be trained to speak and write fluently and correctly. The following subjects may be used for this purpose : — Color, form, size, qualities of objects, the human body, plants, animals, natural phenomena, the reading lessons, pictures, short stories chosen from myths, lives of heroes and heroines, and events in our own and other countries.

(2) The written language should include exercises to teach the correct use of capital letters, punctuation marks, etc., as suggested under Spelling and Dictation, also the writing of the pupils' own thoughts as suggested by their observation and

conversation lessons. (3) Occasionally have pupils make requests in writing. (4) In the third grade use Hyde's Practical Lessons in English, For Third Year of School.

DESK WORK.

ALL THE GRADES.

The purpose of this work is to cultivate in pupils habits of study and industry, to furnish profitable employment for the hours of school not occupied by oral work, and to train the pupils so that they will know how to employ usefully their leisure time out of school.

Let the program for desk work be as carefully prepared as for oral class exercises.

Place upon the board the program of desk work for one session. Give enough work to employ the quickest of the pupils during the session. Do not require the slower pupils to accomplish all the work, but require them to be studious and to do as much as they can do well.

Connect the desk work as closely as possible with the oral class exercises, and let the one depend upon, or be a partial preparation for, the other.

Let the desk work be as varied as possible, and include exercises in reading, language, and number ; in the use of the letter, word, and number tablets ; in drawing and in manual training.

Have regular times for the examination of the desk work, and require all work to be well done.

ALL THE GRADES.

Physiology and Hygiene. Give instruction in these subjects in accordance with the requirements of the Commonwealth.

The law is as follows : " Physiology and Hygiene, which, in both divisions of the subject shall include special instruction as to the effects of alcoholic drinks, stimulants, and narcotics on the human system, shall be taught as a regular branch of study to all pupils in all schools supported wholly or in part by public money."

Moral Instruction. The duty of every teacher is clearly defined by the following extract from the laws of our Commonwealth:

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Physical Exercises. The requirements are as follows: “Midway in each school session five minutes shall be devoted to physical exercises; these shall occur at the same time throughout the building, and meanwhile the schoolrooms shall be thoroughly ventilated.”

The Ling system of Swedish gymnastics, as adapted for the primary schools of Boston, is to be used in all the grades.

Music. See directions of the Director of Music.

Drawing. See directions of the Director of Drawing.

Botany. See directions of the Special Teacher of Botany.

Textbooks in the Primary School.

Reading Books. Barnes's Second; Davis's First and Second; New Franklin Second; Harper's First and Second; McGuffey's Second; Stickney's First and Second; Swinton's Second; Book of Fables; Children's Primer (Cyr); Fables and Folk Stories; Interstate Primer; Riverside Primer and Reader; Sea-side and Way-side, Nos. 1 and 2; Swinton's Golden Book; Wood's Natural History Readers, Nos. 1 and 2.

For Teaching Number. Cogswell's Lessons in Number; Cambridge Number Cards.

Music. Mason's New National Music Charts; Mason's New First Music Reader.

Language. Hyde's Practical Lessons in English, For Third Year of School.

BOTANY.

The following is the outline of the work in botany, prepared by Miss Sarah E. Brassill, the special teacher.

FIRST YEAR — FIRST GRADE.

September.—Wild flowers. Gather wild flowers and keep them growing in the schoolroom. Learn to recognize at least seven. Observe the parts of the plant, their color, shape, size, and use. Describe and draw from the first. Teach the words most frequently used, as part of the reading lessons. Let the pupils help to gather and care for the plants.

October.—Autumn leaves and twigs. Gather autumn leaves from trees in the neighborhood, also twigs on which the leaves are still clinging. Recognize at least three. Observe the attachment to the stem, the parts and qualities of the leaf, and the buds which remain when the leaves fall. Begin the teaching of memory gems.

November.—Fruit. Bring to school fruits found in the market at this season. Study carefully such typical ones as apple, grape, and pumpkin. Learn to recognize many. Find the parts and think of their uses in protecting and distributing the seeds. Gather and save dry fruits and seeds. Connect this work with harvest and Thanksgiving.

December.—Evergreen trees. Study the white pine as a type. Observe the character of the trunk; the number, arrangement, and growth of the branches, leaves, and buds; and the kind of cones. Think of the adaptation to outdoor life in winter. Learn to recognize other evergreens. Connect this work with Christmas.

January and February.—Review. Use plants growing in the schoolroom for a review of parts of a plant and leaf. As the blossoms fade, watch the change from flower to fruit. Teach the pupils to care for house plants.

March.—Contents of seeds and buds. Bring into the schoolroom large buds, such as lilac, horse-chestnut, or hickory. Observe the number, character, and arrangement of the scales and leaves. Recall the autumn work on twigs, and think why protection is needed. Place buds in water in a sunny window and watch the development day by day. Examine large seeds such as bean, pea, and squash, to find the coverings, germ, and food supply. Think of the use of each. Add to the collection of seeds for later planting.

April.—Germination. Start typical seeds in sawdust and on blotting paper. Review the work done in March, and observe carefully all changes in the growing seeds. Think of reasons for differences in the time of germination, and rate and character of development. Plant a few seeds of each kind in the earth for later developments.

May.—Flowers. Gather wild plants having simple, perfect flowers, and keep them growing in the schoolroom. Learn to recognize many. Observe the parts of the flower, their position, color, shape, and use, especially in attracting friends and keeping off enemies. Watch again the change from flower to fruit. Collect and save seeds of native wild flowers.

June.—Flowers and leaves. Continue the May work on flowers. Add the careful study of leaves, using such leaves as pear or cherry for the type. Compare with others to find differences. Think of reasons for differences in the number, shape, size, and arrangement. Press and mount leaves for a school collection. Review the work of the year as an incentive to home work during the summer.

SECOND YEAR — SECOND GRADE.

September.—Wild flowers. Review and extend the work of the first year. Learn to recognize from ten to twenty new flowers. Study the arrangement of flowers in clusters, and the arrangement of parts in irregular and unsymmetrical flowers. Search for something in the life of the plant to account for such arrangement.

October.—Simple and compound leaves. Gather twigs with the leaves attached. Learn to distinguish simple and compound leaves. Find two types of compound leaves. Compare the leaves in shape, size, and position, and think how the differences found would affect the supply of air, moisture, and sunlight received. Collect and press a series of leaves showing a gradation from simple to compound leaf.

November.—Fruits, seeds, and roots. Gather seed pods of various kinds. Observe the attachment of the seeds to the pod, the coverings which protect them, and the means by which they escape from the pod when ripe. Bring to school such vegetables as turnips, parsnips, and beets. Compare them with ordinary roots and also with stems. Find the evidences of the past year's growth and the preparation for a future growth. Place one specimen in earth or water and watch its development.

December and January.—Evergreen trees. Review the white pine. Examine spruce, fir, and juniper, according to the same plan. Compare each with the pine and think of the effect of the differences on the life of the tree. Gather specimens of the wood, bark, and spray, for the school collection.

February.—Development of buds. Review and extend the work of the first year. Observe the position, number, form, size, color, and covering of the buds. Teach the terms opposite, alternate, terminal, and lateral. Open the buds carefully and note the number, character, and arrangement of scales and leaves. Compare other buds with the one first studied to find differences.

March.—Bulbs. Select such bulbs as lily, hyacinth, and onion, for study and development in the schoolroom. Compare them with the buds studied and note the similarity in general appearance, coverings, development, and contents. Account for the early start of bulbous plants in springtime.

April.—Seeds. Choose the bean and corn as types of monocotyledon and dicotyledon. Compare in the number and position of parts, kind of food supply, first and subsequent steps of growth, and arrangement and kind of leaves. Find other seeds of each kind. Plant many and compare in growth. As growth continues, note the habits, especially of the stems. Study a few peculiar stems, as tubers.

May.—Incomplete and imperfect flowers. Gather catkins from the willow, poplar, and alder; also blossoms of the elm, maple, and oak. Determine what parts of the flower are present. Try to discover how the work of the blossom is done. Study one of the early composites and compare its structure and plan of work with that of the others.

June.—Leaves. Select thick, fleshy leaves, and examine them to find the skin, pulp, and skeleton. Think of the use of each to the leaf. Show by simple experiments the breathing and the motions of leaves. Make lists of leaves useful to man for food or medicine. Collect and press as many as possible.

THIRD YEAR—THIRD GRADE.

September.—Autumn flowers, fruits, and leaves. Add to past work the study of such composites as golden rod and asters. Compare them with the simpler blossoms in the number, size, and arrangement of parts. Account for differences. Study such fruits as pear, peach, and locust, as types of fleshy, stony, and dry fruits. Read of foreign fruits. Add as many as possible to the collection. Study the venation of leaves and note the connection between the shape of the leaf and the arrangement of the veins.

October.—Native trees and distribution of seeds. Learn to recognize from seven to twelve trees, choosing those most common in the neighborhood. As the leaves fall, observe the general shape of the tree, the manner of branching, and the character of the bark. Add to the specimens of native woods in the cabinet. Collect and save seed pods from the different plants studied. As they ripen, observe the devices for scattering the seeds. Arrange in groups those having wings, down, hooks, or springs. Note any connection between perfection of device and quantity of seeds.

November.—Stems, as storehouses. Review the work on bulbs and tubers. Search for such other modified stems as Solomon's seal, Indian turnip, and crocus. Find the proof that they are stems.

December.—Evergreen trees. Continue the work of earlier years.

Add a careful comparative study of the common varieties of native evergreens. Study the uses of each and the relative value of their products.

January. — Plant products. Prepare illustrations of the plant and its products in various stages of manufacture. Teach only those which can be illustrated. Choose common home products rather than foreign material at first; corn, cotton, grains, or tree products may be used.

February. — Trees in winter. Choose long, branching twigs of elm, horse-chestnut, or hickory. Account for differences in color in different parts of the twig. Compare the arrangement of the branches with that of the undeveloped buds. Account for the rings, scars, and markings, found on the twig. Review the October work on trees.

March. — Folding of leaves in the bud. Gather twigs having large, well-formed buds. Place some in water, and watch the unfolding of the leaves. Make cross sections of others, and determine the arrangement of the leaves in the bud. Look for a similar arrangement of parts in flower buds.

April. — Food in seeds. Examine large seeds to find out where the food supply is stored. Group the seeds according to quantity and place of food stored up. Plant seeds of each group and account for differences in growth on this basis. Study wood sections.

May. — Flower families. Study carefully many plants of some common family, as the rose family. Compare the blossoms to determine the qualities in which they are alike. Decide upon the marks of the family. Make a list of plants belonging to it. Collect and press as many specimens as possible.

June. — Flower families, continued. Study specimens of crowfoot, lily, or pink family. Review all previous work by tracing the adaptation of part to use. Follow the cycle of plant life from seed to seed. Think of the adaptation of each part of the plant to its use. Account for the uses made of certain parts by man.

The following exercises prepared by Miss Mary A. Lewis, of the Boardman School, will be found helpful in teaching phonics.

ă: lap, nap, sap, chap, map, tap, rap; pad, lad, had, bad, sad, mad; hand, land, band, sand, and; bat, cat, hat, rat, mat, pat, chat, fat, that; match, latch, catch; bag, rag, tag, wag; ax, tax, wax; have; has, as; ham, am; pan, fan, man, ran, than, an.

ě: bed, sled, shed, fed, led, red; pet, net, get, let, met, set, wet, yet; peg, keg, leg, egg, beg; chest, vest, nest, rest, best, west; less, yes; bell, shell, yell, tell, fell, sell, well; pen, den, hen, men, then; end, tend, send, lend, mend; bent, went, sent, lent.

ĩ: it, pit, fit, bit, hit, sit, quit; pig, wig, fig, dig, rig, big; brick, kick, stick, quick, thick, sick; his, is; kiss, hiss, miss; dish, fish, wish; bill,

pill, gill, hill, quill, rill, mill, will, fill, ill; pin, tin, chin, fin, win, thin, in; ink, drink, wink, think.

ō: sob, rob; top, hop, drop; pod, hod, cod, sod, rod, nod; spot, lot, got, shot, not; bog, dog, hog, fog, lōg; ox, box, fox; of; off; loss, moss, toss; or, for; on, gone.

ũ: tub, rub; cup, up; bud, mud; hut, nut, cut, shut, but; such, much; bug, jug, rug, mug, dug, hug; buzz; us, dust, rust, must; gum, sum, bun, tun, gun, fun, sun, shun, run.

ÿ: baby, lady, city, tidy, ugly, lazy, silly.

ā: ape, tape, scrape, shape; fade, wade, shade, made; date, gate, slate, mate, ate, late; age, page, cage, rage; lake, rake, bake, take, quake, shake; game, name, tame, lame, same.

ē: we, he, she, me, be, here, these.

ī: pipe, stripe, wipe, ripe; hide, glide, slide, ride, wide; kite, mite, bite, quite; ice, rice, mice, nice; like, strike; pile, file, mile; wire, quire, fire, tire, hire; dime, time, lime; pine, vine, line, mine, nine, dine, shine, fine.

ō: go, so, no; rope, hope; mote, note; pole, gold, told, hold, fold, sold, old, bold, cold; tone, cone.

ȳ: fly, sky, my, try, sly, dry, by, why.

â: all, salt, call, fall, small, warm, also.

ô: prove, move, do, to.

ô: son, month, love, done, come, some.

är: arm, farm, barn, are, charm, harm. — (ër) her, herd, letter, dinner, supper, wonder. — (ïr) bird, dirt, girl, sir, stir, first, third. — (ör) lord, sort, orchard, or, for, nor. — (ïr) church, curl, burn, burst, turn. — (ōo) book, wool, look, took, shook, stood, good. — (ōo) room, moon, noon, food, school, soon. — (oi) oil, voice, noise, point, boil, soil, spoil. — (oy) boy, toy, joy. — (ou) our, sound, house, count, loud, sour, out. — (ow) owl, fowl, town, frown, scowl, cow, bow, how, now. — (ea = ě) head, bread, lead, thread, read, spread. — (ai = ā) pail, tail, nail, snail, sail, fail, wait. — (ay = ā) day, way, hay, ray, pay, say, lay, gay. — (ea = ā) steak, break, great. — (ei = ā) skein, reins, veil, vein. — (ey = ā) they, obey. — (eigh = ā) eight, weight freight, neigh, neighbor. — (ee = ē) bee, beef, feet, queen, seed, seen, sleep, keep, green. — (ea = ē) sea, seal, ear, tear, hear, fear, leave, near, dear. — (ie = ē) field, piece, thief, chief, niece, yield, believe. — (igh = ī) sight, light, night, right, bright, high. — (ie = ī) pie, lie, died, cried, tied, tried, dried, fried. — (oo = ō) door, floor. — (oa = ō) boat, coal, load, loaf, soap, coax, boast. — (ow = ō) mow, row, own, thrown, shown, flown. — (ew = ū) dew, few, mew, stew, blew, chew, flew, new. — (ue = ū) blue, due, glue, hue, value. — (au = â) sauce, fault, gauze, August, taught, caught. — (aw = â) paw, law, hawk, saw, draw, crawl. — (ou = ōo) could, would, should. — (ew = ōo) screw, drew, grew, threw, strew.

b: bat, bag, babe, tub, beg, bite, rob, rub, blue. — (p) pail, part, pill,

pine, papa, paper, peep, dip. — (*d*) day, door, lead, do, did, dead, bad, odd. — (*t*) tart, tent, time, tun, must, past, tight. — (*j*) jam, jug, joy, John, jump, join, just. — (*g*) age, George, giant, edge, bridge, gentle. — (*ch*) child, church, beach, inch, change, teach. — (*ġ*) girl, goat, grass, rag, fig, gave, get, gone. — (*ç*) cake, corn, cup, can, call, came, could. — (*k*) kite, kick, cake, rake, like, strike, kind. — (*w*) wall, way, walk, were, warm, wise, wide. — (*wh*) who, what, which, when, where, why. — (*y*) year, yarn, your, young, yet, yes. — (*h*) hen, hill, hoop, has, hope, here, how. — (*qu*) quart, queen, quack, quite, queer, quick. — (*x*) ax, ox, box, fox, wax, vex, mix, extra. — (*v*) vane, vine, voice, wave, save, live, love. — (*f*) flag, farm, father, knife, fat, fine, for. — (*th*) that, this, they, bathe, breathe, thus, with. — (*th*) smith, cloth, thank, throw, thick, thin. — (*z*) zebra, zinc, zone, buzz, zigzag. — (*s*) rags, fans, bees, tubs, his, has, spins, chose. — (*s*) sand, sled, class, fist, nest, sat, send, some. — (*ç*) cell, cent, city, rice, face, nice, twice. — (*sh*) she, shell, dish, crash, shall, show, hush. — (*l*) let, lift, sell, will, last, left, lost, full. — (*r*) rat, rag, rock, run, roar, red, round. — (*m*) man, me, elm, form, name, him, harm. — (*n*) name, nine, noon, fine, soon, none, no. — (*ng*) ring, thing, song, bring, hung, going. — (*ck = k*) back, peck, duck, block, clock, cluck, struck. — (*çh = k*) ache, echo, chorus, school. — (*gh = f*) cough, laugh, tough.

Words to be used in the first and second grades to test the ability of pupils to recognize and name the letters of the alphabet.

And, are, ate; bud, box, buzz; come, cent; day, dove, does; end, eat, each; for, fox, few; gave, girl, gone; has, hoop, hear; ice, inch, into; join, jug, joke; key, knit, know; lay, log, laid; more, mug, mean; nine, new, never; out, only, oar; pan, pint, pie; quite, queer, quince; ring, room, roll; size, such, soon; take, time, tub; under, use, upon; vex, voice, vine; wax, was, would; your, yard, year; zebra, zinc, zone; ox, mix, axe.

RULES OF THE BOARD OF SCHOOL COMMITTEE.

CHAPTER I.

Organization.

SECTION 1. The Mayor of the city, as Chairman *ex officio* of the Board of School Committee, shall call a meeting of the Board during the first week of each municipal year. First meeting. § 4, 73.

All committees shall be nominated by the Chairman, or in his absence by the Presiding Officer, unless otherwise ordered by the Board. Appointment of Committees. § 12.

SECT. 2. The organization shall be as follows : — Organization.

At the first meeting of the year, a Presiding Officer shall be chosen by ballot for the year ensuing. Presiding Officer. § 4, 12.

A Secretary and a Page shall be elected by ballot and their salaries fixed for the year ensuing. Secretary and Page. § 13.

SECT. 3. The following Standing Committees shall be appointed : — Standing Committees.

A Committee of seven, one from each ward and two at large, on Examination of Teachers. Committee of seven.

Committees of five, one from each ward : —

On High Schools ; Evening Schools ; Training School ; Kindergartens ; Text-books and Courses of Study ; Truant Officers ; Schoolhouses.

Committees of five.

Committees of three members each : —

On Rules and Regulations ; Accounts and Estimates ; Salaries ; Supplies ; Drawing ; Music ; Sewing. (Page 29.)

Committees of three.

CHAPTER II.

Rules Governing Meetings.

SECTION 4. Regular meetings of the Board shall be held monthly at such times as shall be determined by vote. Regular meetings.

Special meetings of the Board may be called by the Special meetings.

§ 1, 2.

Mayor, or, in his absence from the city, by the Presiding Officer, and shall be called by the Secretary upon the written request of three or more members of the Board. A notice, stating the object of such meeting, shall be sent to each member at least forty-eight hours previous to the meeting.

Order of business.

SECT. 5. The order of business shall be as follows :—

1. Reading the records of the last meeting.
2. Communications from His Honor the Mayor, the City Council, or other city officers.
3. Approval of bills.
4. Nomination, resignation, and transfer of teachers.
5. Reports of Committees.
6. Unfinished business of previous meetings.
7. Orders, resolutions, petitions, etc.

Quorum.

SECT. 6. Eight members of the Board shall constitute a quorum for the transaction of business.

Suspension of rules.

SECT. 7. The consent of three-fourths of the members present at any meeting shall be requisite for the suspension of any of these Rules.

Amendments.
§ 23.

SECT. 8. Any amendment of these Rules or Regulations must be proposed in writing and referred to the Committee on Rules and Regulations, who shall report thereon in writing at the next regular meeting, when the report and the proposed amendment shall be in order for consideration and action; and a vote in favor of the proposed amendment of two-thirds of the members present shall be necessary for its adoption.

Yea and nay
vote to be
taken on cer-
tain orders.

SECT. 9. On all orders authorizing the expenditure of money, the approval of the monthly bills and confirmation of teachers excepted, and on all orders increasing salaries, a yea and nay vote shall be taken.

Nominations.
§ 14, 21, 38-41,
46-48, 54, 56,
103, 113, 131.

SECT. 10. No nomination shall be acted upon before the next regular meeting succeeding that at which it is made, excepting the nominations of principals of the Evening Schools which may be acted upon at once.

Proprieties in
debate.

SECT. 11. Every member, when about to speak, shall rise and respectfully address the Chair, shall confine himself to the question under debate and avoid personalities.

CHAPTER III.

Duties of Officers and Committees.

SECTION 12. In the absence of the Mayor, the Presiding Officer shall preside at the meetings of the Board. Duties of Presiding Officer. § 2.

SECT. 13. It shall be the duty of the Secretary to notify the members of the Board by mail of all meetings ; Duties of Secretary. § 2. to call special meetings of the Board when requested to do so by the Mayor, by the Presiding Officer, or by three or more members of the Board ; to attend all meetings of the Board, record all its votes, orders, and proceedings in a permanent record-book, report an abstract of the same in some paper printed in Cambridge, and send a copy of this abstract to each member of the Board and to the Principal of each school ; to notify each member of every committee of his appointment, stating the names of the other members of the committee ; to preserve files of communications and documents belonging to the Board ; to furnish all teachers appointed or confirmed by the Board with certificates of their qualifications ; to prepare the school returns required by law ; and to perform such other duties as properly belong to the office.

SECT. 14. The Committee on Examination of Teachers shall inquire and report as to the qualifications of all persons nominated to be teachers in the Grammar and Primary Schools and Kindergartens, below the grade of Master, before final action on such nominations is taken by the Board. This committee shall also inquire and report to the Board in executive session, as to the success of any teacher in the employment of the city, when so requested by any member of the Board or by the Superintendent. Committee on Examination of Teachers. § 10, 42, 43, 70.

SECT. 15. The Committee on High Schools shall have general supervision of the Latin School and the English High School, and shall hold regular meetings, at which the Secretary of the Board shall serve as secretary if it is so desired. Committee on High Schools. § 19, 46, 51, 103, 105, 107.

SECT. 16. The Committee on Evening Schools shall have general supervision of the Evening Grammar Schools and the Evening High School. This committee shall make a written report of the work of the year to the Board at the meeting in December. Committee on Evening Schools. § 54, 55, 116.

SECT. 17. The Committee on Training School shall have supervision of the school, and shall have charge of the Committee on Training School.

§ 56, 125, 126,
129, 130.

substitute teachers employed by the city. This Committee shall make a written report to the Board at the meeting in December.

Committee on
Kindergartens.
§ 41, 42, 48,
82-84.

SECT. 18. The Committee on Kindergartens shall have the care and management of all the Kindergartens supported by the city. (See page 29.)

Committee on
Text-books and
Courses of
Study.
§ 15, 67, 91.

SECT. 19. The Committee on Text-books and Courses of Study shall consider every proposition involving a change in the text-books or in the courses of study prescribed for the Grammar and Primary Schools and Kindergartens. Similar propositions relating to the High Schools shall be considered by the Committee on High Schools. Reports shall be made in writing at the next regular meeting of the Board, and may be amended by a majority vote of the members present; but no change of text-books shall be made, and no text-book shall be adopted, except by a two-thirds vote of the Board. Annually, the Committee on Text-books and Courses of Study and the Committee on High Schools shall examine the courses of study pursued in the schools under their charge, and shall recommend to the Board, at the meeting in April, such changes in text-books and instruction as they may deem expedient. Whenever the Committee on Text-books and Courses of Study or the Committee on High Schools recommend the introduction of a text-book, they shall request the author or publisher of such book to furnish each member of the Board with a copy thereof for examination; and, on request of the publisher, these copies shall be returned after the question of the adoption of the book has been decided.

Changes in
Text-books and
Courses of
Study.

Text-books for
examination.

Charge of
teachers'
meetings.
§ 67, 139.

SECT. 20. The Committee on Text-books and Courses of Study shall have general charge of the teachers' meetings and courses of instruction in methods of teaching, and shall determine the time and place for these meetings.

Committee on
Truant Offi-
cers.
§ 10, 148, 149,
151, 153, 155.

SECT. 21. The Committee on Truant Officers shall have general supervision and control of the truant officers. They shall make such regulations for the government of the officers in the discharge of their duties as may be necessary, and assign them to the several school districts as they may deem expedient. Annually, at the regular meeting in June, and when vacancies occur, this committee shall nominate suitable persons for election by the Board as truant officers. This committee shall hold regular meetings and shall make

a written report to the Board at the meeting in December.

SECT. 22. The Committee on School-houses shall consider every matter relating to the erection or alteration of a school-house that shall be referred to them by the Board, and shall report in writing such recommendations in each case as they may deem expedient. They shall have general supervision and control of the janitors, and shall from time to time examine all the schools and school-houses in the city, and annually, in the month of December, and at such other times as they may see fit, shall report upon the sanitary condition thereof.

Committee on School-houses.
§ 69, 141.

SECT. 23. The Committee on Rules and Regulations shall consider every proposition to repeal or amend any rule or regulation whenever the same shall be referred to them, and shall report in writing, at the next regular meeting of the Board, stating the reasons for or against the proposed change.

Committee on Rules and Regulations.
§ 8.

SECT. 24. The Committee on Accounts and Estimates shall carefully examine and audit all accounts before they are submitted to the Board. They shall submit each month a statement showing the appropriations, expenditures, and balances unexpended. Annually, in the month of December, this committee shall submit in print to the Board an estimate of the amount of money required for the support of the public schools during the current financial year, and this estimate shall be considered by the Board at its first meeting in January.

Committee on Accounts and Estimates.
§ 27, 30, 51, 52.

SECT. 25. The Committee on Salaries shall consider all propositions for changes in the salaries of teachers referred to them, and shall report in writing at the next regular meeting, such recommendations concerning the same as they may deem expedient. No change shall be made in the salary of any teacher until the report of the committee thereon shall have been received. Annually, in the month of May, this committee shall consider the salaries of all teachers and officers, and shall report at the meeting in May such changes as they may recommend.

Committee on Salaries.
§ 45-50.

SECT. 26. The Committee on Supplies shall have exclusive authority to provide all text-books and supplies used in the public schools, and by the Board and its officers. This committee shall have exclusive power to make such expenditures, except for salaries, as may be required in

Committee on Supplies.
§ 27-31, 62, . . .

teaching the branches of study approved by the Board; but they shall not exceed any of the amounts specified in the estimates, unless so authorized by the Board.

Contracts.

SECT. 27. They may, if they deem it expedient, advertise for proposals, and contract with responsible parties to provide any or all text-books and supplies; they shall also have the custody and management of all such property procured for the schools.

Employment
and duties of
Agent.
§ 29, 74.

SECT. 28. They shall employ an agent to take charge of all text-books and supplies purchased by them, and to attend to the distribution, care, and protection of the same, under their supervision; and annually they shall fix his salary subject to the approval of the Board. He shall hold office at the pleasure of this committee, shall attend their meetings, record their transactions, and perform such other duties as may be required.

Annual report.

SECT. 29. Annually, in the month of November, he shall submit to this committee, in detail, an account of all the articles purchased and distributed to the several schools during the preceding school year, as well as of the stock on hand; and annually, in the month of December, this committee shall submit a similar report to the Board.

Approval of
bills.
§ 24.

SECT. 30. All bills for expenditures by this committee shall be approved by at least two members thereof, and submitted monthly to the Committee on Accounts and Estimates.

Additional
regulations.

SECT. 31. This committee may make such other regulations from time to time as may be necessary for or advantageous to the conduct of their business, and shall submit the same to the Board, at the next regular meeting, for approval.

Committee on
Drawing.
§ 38, 67, 123.

SECT. 32. The Committee on Drawing shall exercise a general supervision over this department in all the day and evening schools and the Director of Drawing shall perform his duties under their direction. This committee shall make a written report to the Board at the meeting in December.

Committee on
Music.
§ 39, 67.

SECT. 33. The Committee on Music shall exercise a general supervision over this department in all the schools and the Director of Music shall perform his duties under their direction. This committee shall make a written report to the Board at the meeting in December.

SECT. 34. The Committee on Sewing shall have general supervision of the instruction in sewing, and shall examine the pupils in this branch. This committee shall make a written report to the Board at the meeting in December.

Committee on Sewing.
§ 40, 134.

Ward committees.
§ 36, 47, 51, 81.

Sub-committees.

SECT. 35. The members of the Board from each ward shall constitute the Ward Committee, and the schools in the ward not under the direction of a standing committee shall be under their charge. They may assign the schools under their charge as they may see fit to sub-committees.

SECT. 36. It shall be the duty of sub-committees having charge of schools to give advice to the teachers in any emergency; and, on complaint duly made, to take cognizance of any difficulty that may have occurred between the teachers and the parents or guardians of the pupils, subject to an appeal to the Board. When the place of teacher in any school shall become vacant, the Sub-Committee of the school in which the vacancy occurs shall fill the vacancy after consultation with the Superintendent and the Ward Committee, and report his action to the Board for approval.

Duties of sub-committees.

SECT. 37. It shall be the duty of sub-committees to make such temporary arrangements as they may find necessary either in relation to their schools, or for the convenience of the teachers in cases not provided for in the regulations.

Temporary arrangements.

CHAPTER IV.

Election and Salaries of Teachers.

SECTION 38. The Committee on Drawing shall nominate a Director of Drawing for election by the Board. The Committee on Drawing shall appoint as many assistants for the Evening Drawing School as may be thought necessary before the beginning of the term. This number may be increased or diminished during the term as the needs of the school may require, but shall not exceed one assistant for every twenty pupils in mechanical drawing, nor one for every fifteen pupils in freehand drawing.

Director of Drawing.
§ 10, 132.

Assistants in Evening Drawing School.
§ 32.

SECT. 39. The Committee on Music shall nominate a Director of Music for election by the Board.

Director of Music.
§ 10, 33, 133.

SECT. 40. The Committee on Sewing shall nominate teachers of sewing for election by the Board.

Teachers of Sewing.
§ 10, 34, 134.

Teachers of
Kindergartens.
§ 10, 18.

SECT. 41. The Committee on Kindergartens shall nominate teachers for the Kindergartens for election by the Board.

Candidates
eligible for
Kindergartens.
§ 14

SECT. 42. No teacher shall receive an appointment in a Kindergarten who has not taken a course of study for at least one year at some Kindergarten Normal School approved by the Committee on Kindergartens and the Superintendent of Schools.

Candidates
eligible for
Grammar and
Primary
Schools.
§ 14, 125.

SECT. 43. No person shall be eligible to the position of teacher in the Grammar or Primary Schools who is not equally qualified with teachers who have completed the required term of service in the Cambridge Training School.

Term of office.

SECT. 44. Directors and teachers shall hold office at the pleasure of the Board until the end of the school-year.

Election.

SECT. 45. The teachers shall be chosen annually, and their salaries voted, at the regular meeting in June. Those teachers will be considered candidates for reelection who do not signify a desire to the contrary.

Nominations at
a salary other
than the mini-
mum.
§ 10.

SECT. 46. All nominations for the Latin School and the English High School at a salary other than the minimum shall be made only upon the recommendation of a majority of the Committee on High Schools.

§ 10, 35.

SECT. 47. All nominations for the Grammar and Primary Schools at a salary other than the minimum shall be made only upon the recommendation of the three members of the Ward Committee, or of two members and the Superintendent.

9.

SECT. 48. All nominations for the Kindergartens at a salary other than the minimum shall be made only upon the recommendation of a majority of the Committee on Kindergartens.

Experience
considered.

SECT. 49. Experience in teaching, whether in or out of the city, may be considered in fixing the salaries of teachers.

Payment of
salaries.

SECT. 50. Directors and teachers, except those in the Evening Schools, shall be paid one-tenth of their annual salaries at the beginning of each month except the months of August and September. The pay of regular teachers who are in school only a part of a month shall be as many four-hundredths of the annual salary as there are school sessions of service. The date of the regular increase of salaries shall be the first day of September, December, or March, whichever is nearest the time of appointment, not counting July and August.

Time of
increase of
salaries.

SECT. 51. A substitute employed in the absence of any teacher shall be paid from the salary of that teacher, unless, upon a report of the Committee on Accounts and Estimates, the Board shall otherwise order. The pay of substitutes, when acting as assistants in the Grammar and Primary Schools, shall be one dollar for each school session.* This rate of pay shall continue for the first four weeks of the teacher's absence, after which it may be increased by the Ward Committee. In the High Schools and Kindergartens the pay of substitutes shall be two-thirds of the salary of the regular teacher. After four weeks this may be increased by the respective committees in charge of these schools. Substitutes shall be paid before the fifth of the month following that in which the service was rendered. (Page 29.)

Payment of substitutes.
§ 35, 59, 127, 128, 130.

SECT. 52. After the first four weeks of absence, the pay of any teacher shall be only so much as shall be required to pay the substitute. A longer continuance of the full salary may be granted, provided the Committee on Accounts and Estimates, on written recommendation of the Committee in charge of the school to which the absentee belongs, shall so recommend to the Board.

After four weeks of absence.
§ 59.

SECT. 53. The names of teachers temporarily employed in any school shall be placed upon the pay-roll and the correctness of their bills certified by the Superintendent.

Payment for temporary services.

SECT. 54. At the meeting of the Board in September, the Committee on Evening Schools shall submit to the Board nominations for principals of the Evening High and the Evening Grammar Schools, who, when elected, shall hold office at the pleasure of the Board during the term.

Principals of Evening Schools.
§ 10, 16.

SECT. 55. As many assistants as may be thought necessary shall be appointed for each school by the Committee on Evening Schools before the beginning of the term. The number may be increased or diminished by said Committee at any time during the term, but shall not exceed one assistant for every eight pupils.

Assistants in Evening Schools.
§ 16.

SECT. 56. In the Training School, the Master and the assistants shall be nominated by the Committee on Training School for election by the Board. The teachers constituting the Training Class shall be chosen by the Committee on Training School.

Teachers in Training School.
§ 10, 17, 125.

*Sessions omitted by direction of the Superintendent on account of storms or for teachers' meetings are considered school sessions in determining the amount to be paid to substitutes.—*Order of School Committee, Apr. 21, 1877.*

REGULATIONS FOR THE PUBLIC SCHOOLS.

CHAPTER V.

Regulations Relating to the Instructors.

Teachers to
observe Regu-
lations.

SECTION 57. All teachers in the public schools are required to make themselves familiar with the provisions of these regulations, especially with that portion of them relating to their school duties. They are also required to observe and carry into effect all the regulations of the Board in relation to the instruction and discipline of their respective schools. No teacher shall be excused from the observance of any regulation except by a vote of the Board.

Before school
hours.

SECT. 58. All teachers are required to be at their respective school-rooms at least fifteen minutes before the time specified for beginning school; and all pupils when in or about their respective school-houses shall be subject to the rules of order for school-hours.

Absences of
teachers to be
reported.
§ 35, 51, 52, 58,
60-62.

SECT. 59. When any teacher is absent from school he or she shall give notice immediately of such absence, and the reason therefor, to the Superintendent. At the end of each month each teacher shall send to the Superintendent a report of the number of school sessions from which he or she has been absent from school during that month, the reason for such absence, the names of the substitutes, and the number of school sessions each substitute was employed; and also the number of times he or she has failed to be present at school fifteen minutes before the opening of each session.

Record of
absences.

SECT. 60. The Superintendent shall keep a record of these absences, which shall at all times be open to the inspection of the Committee.

Absence of
more than four
weeks.

SECT. 61. When a teacher has been absent from school more than four weeks, the Master or Principal of the school to which the teacher belongs shall report the fact immediately to the Secretary of the Board, and shall also report at once the date of the teacher's return.

Absence with-
out permis-
sion.

SECT. 62. The absence of any teacher from school during any session required by these regulations, without permission from the Committee in charge or the Superintendent, shall be considered sufficient cause for removal.

SECT. 63. It is enjoined on the teachers to exercise vigilant, prudent, and firm discipline, and to govern by persuasion and gentle measures as far as possible. No pupil shall be kept after the morning session more than fifteen minutes, or after the afternoon session more than half an hour. No pupil entering school shall be subject to corporal punishment in any form. But, if a pupil prove to be disorderly or refractory, such pupil shall be liable to corporal punishment during the remainder of the term, the written consent of the Committee in charge of the school having been first obtained, and due notice to the parent or guardian having been given by the Principal.

SECT. 64. Any teacher may suspend a pupil from school for violation of the school regulations or the rules of the school, or for any other sufficient cause; but he shall immediately report the case to the parent or guardian of such pupil, and to the Committee in charge of the school or to the Superintendent, with a written statement of the cause of such suspension. Whenever the Superintendent is notified of the suspension of a pupil he shall investigate the case; and if in his judgment the case requires it, he shall report to the Committee in charge of the school. Except in aggravated cases, suspension shall take effect only at the end of a school session; and no pupil shall be sent from the school-building during school hours by reason of misconduct or failure in lessons, without the knowledge of the Principal, who shall make a record of each case and send notice thereof at once by the truant officer to the parent or guardian. A pupil under censure in one school shall not be admitted to any other.

SECT. 65. Every pupil not present in the school-room at the time appointed for opening the session of the schools shall be recorded as absent unless he is present during some part of that session, in which case he shall be recorded as tardy. Any pupil not having a satisfactory excuse for either absence or tardiness may be required to bring from the Committee in charge of the school or the Superintendent a written permit to return to school. It shall be the duty of each teacher to ascertain the cause of frequent or prolonged absence of any pupil of his school; and to use his influence to prevent its repetition.

SECT. 66. Teachers shall report the names and resi-

Discipline.

Detention
after school.Corporal
punishment.Suspension of
pupils.Report there-
of.

§ 153.

Pupils under
censure.Absence and
tardiness of
pupils.
§ 75, 114, 118

Truants.

- § 153. dences of habitual truants and the names of their parents or guardians to the truant officer of the district.
- Visiting schools. SECT. 67. The teachers may, under the direction of the Superintendent, visit other schools to observe the discipline and instruction. They may be required to attend teachers' meetings or courses of instruction in methods of teaching for one hour a week, unless excused by the Superintendent. Such meetings may be held on Saturday morning during term-time, or at such other time, not in school-hours, as the Committee on Text-books and Courses of Study may direct. Meetings held by the Superintendent, and meetings called by him, by request of the Director of Drawing or the Director of Music under the authority of the Standing Committees having supervision of the instruction in these subjects, shall be in addition to the above requirements.
- Teachers' meetings. § 20.
- § 32, 33, 139.
- Care of school supplies. § 26. SECT. 68. The principals of the several schools shall be responsible for all books, apparatus, and materials supplied to their schools, and annually, at the end of the spring term, shall make a return of the same to the Committee on Supplies.
- Care of school-houses. § 141. SECT. 69. The principals shall exercise proper supervision of the school-houses and the appurtenances thereto, and report such repairs as may be required to the Superintendent of Public Buildings or to the Superintendent of Schools.
- Dissatisfaction with a teacher. § 14. SECT. 70. Any member of the Board who is dissatisfied with a teacher shall give notice of such dissatisfaction to the Board; and all further action in relation to such teacher shall be under its direction.

CHAPTER VI.

Regulations Common to all the Public Schools.

- Classification of schools. SECTION 71. The public schools of Cambridge shall be classified as follows: — Kindergartens, and Primary, Grammar, and High Schools.
- School terms. SECT. 72. The school-year shall be divided into three terms, — the autumn, the winter, and the spring term. The autumn term shall end December twenty-third with the morning session. The winter term shall begin January second (or on the day after that celebrated as New Year's Day) and shall

end on the last Friday in March. The spring term shall begin on the second Monday after the last Friday in March. The time for the closing of the spring term and for the beginning of the autumn term shall be fixed annually at the regular meeting of the Board in April.

SECT. 73. In addition to the vacations provided in the ^{Holidays.} preceding section, the schools shall have no session on Saturday. Thanksgiving Day with the day preceding and the day following, the Twenty-second of February, the Nineteenth of April, Memorial Day, the Seventeenth of June, and also for the High Schools, Commencement day at Harvard College, shall be holidays. The Chairman of the Board is authorized to suspend the schools on such public ^{§ 1.} occasions as he may think proper, not exceeding three days in any one municipal year; and each Sub-Committee may suspend the schools under his immediate charge on such other occasions as he may think proper, not exceeding three days in a year.

SECT. 74. No pupil shall be admitted to any school ^{Contagious diseases.} without a certificate of vaccination from a physician. No ^{§ 154.} teacher or pupil shall attend school while any member of the household to which such teacher or pupil belongs is sick with small-pox, varioloid, diphtheria, or scarlet-fever, or during the period of two weeks after the death, recovery, or removal of such sick person, such length of time being certified in writing to the teacher by the physician of the board of health. All text-books belonging to the city, ^{§ 28.} which are in such homes, shall be destroyed by direction of the agent of the Committee on Supplies. No teacher or pupil shall be allowed to attend school who is affected with measles or whooping-cough. Teachers shall have authority to exclude temporarily from school any pupil who may be affected with other diseases or eruptions of doubtful character; but all such cases shall be reported at once to the Committee in charge of the school. (See page 29.)

SECT. 75. No pupil belonging to a public school shall be absent from school, or be excused from any school exercise, in order to receive regular instruction elsewhere, without the consent of the Committee in charge of the school. The absence or tardiness of any pupil so excused shall not be considered in making up the statistics of attendance. ^{Absence for instruction elsewhere. § 65.}

Devotional
exercises.

SECT. 76. The morning exercises in all the schools shall begin with reading from the Scriptures and the repetition or reading of the Lord's Prayer.

Non-resident
pupils.

SECT. 77. Non-resident pupils and those residing in Cambridge for the sole purpose of attending school, shall neither be admitted to nor retained in any school without a permit from the Superintendent. The Superintendent is authorized to give permits to those applicants only who shall have paid in advance to the City Treasurer the tuition fee fixed by the Board.

Pupils to a
teacher.

SECT. 78. In the Primary Schools there shall be, as nearly as possible, one teacher for every fifty pupils, and in the Grammar Schools one assistant teacher for every fifty pupils, in conformity with chapter 44, section 14, of the Public Statutes. In any Grammar School having more than ten rooms, an additional assistant teacher may be appointed who shall work in the various grades as directed by the Master and the Superintendent.

Collections of
money.

SECT. 79. No subscription or collection of money for any purpose whatever shall be allowed in any of the schools, or from any of the pupils, unless by written permission of the Committee in charge of the school.

Advertise-
ments.
Agents.

SECT. 80. No person shall read any advertisement to the pupils in any school; and no agent or other person shall enter any school for the purpose of exhibiting, either to teachers or pupils, any book or article of apparatus, unless by the written permission of the Committee in charge of the school.

School dis-
tricts.

SECT. 81. Each ward may be divided by the Ward Committee into districts; and no pupil shall be admitted to or retained in any school, except that for the district in which he resides, without the written consent of the Committee of the school to which such pupil belongs, and of that where he seeks to be admitted or retained. No pupil who has been attending any public school shall be received into another school of the same grade unless he presents a certificate from his last teacher that he has been regularly dismissed. The certificate shall also state the grade to which the pupil belonged.

Certificates of
discharge.
§ 35, 36.

CHAPTER VII.

Regulations for the Kindergartens.

SECTION 82. Children between three and a half and five years of age may be admitted to the Kindergarten nearest their homes by applying during the month of April or September. They may remain one year, or for a longer time if less than five years of age. Admission to Kindergartens § 18, 74.

SECT. 83. Each Kindergarten shall contain not less than twenty-five nor more than fifty pupils. For thirty or more pupils there shall be a Principal and an Assistant. An attendant, if thought necessary by the Committee on Kindergartens, may be appointed in any Kindergarten, who may be paid at a rate not exceeding twenty-five cents a day. Number of pupils. § 51.

SECT. 84. The sessions of the Kindergartens shall be from 9 A. M. to 12 M. Teachers shall employ their afternoons, except when the time is needed for preparation for their work, in visiting the homes of their pupils with a view of maintaining friendly relations with the parents, and also of securing regularity of attendance. Sessions. § 73, 146. Afternoon service.

CHAPTER VIII.

Regulations for the Primary and Grammar Schools.

SECTION 85. Pupils in the Primary Schools shall be classified, according to their qualifications, in three grades, to be known as the first, second, and third. Classification of pupils in Primary Schools.

SECT. 86. Pupils shall be admitted regularly to the Primary Schools on the first school day of March and September only; but pupils in all respects qualified to join existing classes may be admitted at any time on application to the Principal of the school to which they respectively belong. No child under the age of five years shall be received into any Primary School. Admission to Primary Schools. § 74, 92.

SECT. 87. There shall be in each Primary School a Principal, who shall be nominated by the Sub-Committee having charge of the school, subject to confirmation by the Board, whose duties shall be as follows: she shall make all necessary regulations for the management of the pupils when not assembled in their respective rooms; she shall receive Principals of Primary Schools. § 61, 63, 64, 68, 69.

all applications for admission to the school, assign each pupil to his proper class, and, after the annual promotion of classes, shall have charge of re-organizing the school; and no pupil shall be changed from one class to another without her consent, or the consent of the Superintendent of Schools; she shall keep the statistics of the school, and such other records as from time to time may be required by the Committee or the Superintendent; she shall see that there is uniformity among the teachers in the interpretation of these regulations and of the doings of the Board as published by the Secretary. (See page 29.)

Special
teacher in
Primary
Schools.

SECT. 88. There shall be one special teacher of Primary Schools who, under the direction of the Superintendent, shall have general supervision of such schools throughout the city.

Promotions in
Primary
Schools and
from Primary
to Grammar
Schools.

SECT. 89. Promotions from grade to grade in the Primary Schools and from the Primary to the Grammar Schools shall be made according to the judgment of the primary teachers, under the direction of the special teacher of Primary Schools and the Superintendent.

Promotion by
Classes.

SECT. 90. Promotions by classes from the Primary to the Grammar Schools shall be made annually at the beginning of the autumn term; but individual pupils may be promoted at other times, if it is deemed expedient by the Sub-Committee or the Superintendent.

Arrangement
of Work of
Grammar
Schools.
§ 19.

Classification
of Pupils in
Grammar
Schools.

SECT. 91. The work of the Grammar Schools shall be arranged in two courses, one to be accomplished in six years and the other in four years. The pupils pursuing the six years' course shall be classified in six grades, to be known as the fourth, fifth, sixth, seventh, eighth, and ninth grades; and those pursuing the four years' course shall be classified in four grades, to be known as grades A, B, C, and D. Pupils may be transferred from one of these courses to the other at the end of any school year, or, if the master sees special reason, at any time during the school year. An ungraded class may also be formed when in the opinion of the Sub-Committee having charge of the school and the Superintendent such a class would be for the interest of the school.

Ungraded
classes.

Promotions in
Grammar
Schools and
from Gram-
mar to High
Schools.

SECT. 92. Promotions from grade to grade in the Grammar Schools and from the Grammar to the High Schools shall be made by the teachers under the direction of the Grammar School Masters and the Superintendent. Pupils

in all respects qualified to join existing classes may be admitted at any time on application to the Principal of the school to which they respectively belong.

Admission to
Grammar
Schools.
§ 74, 86.

SECT. 93. No regular pre-announced examinations shall be held in the Primary or Grammar Schools; but the results of such written exercises and written reviews as the teachers and masters may hold from time to time without previous announcement may be recorded and used as a part of the basis of promotion. In the lowest grades of the Grammar and High Schools, records shall be kept of the work of pupils promoted without examination.

No pre-
announced
examinations.

SECT. 94. The Master's Assistant in each Grammar School shall keep the general records of the school, shall collect such statistical information in regard to the school as the Committee or the Superintendent may require, shall have charge of the Master's room during his absence, and shall teach such subjects as he may require. There shall be but one master's assistant in each Grammar School.

Duties of
Masters'
Assistants.

SECT. 95. The Sub-Masters in the Grammar Schools shall assist in the care and distribution of supplies and in the maintenance of order, as they may be directed from time to time by the Masters. In the temporary absence of the Master, the Sub-Master shall have charge of the pupils while in the halls and basements and in the vicinity of the school building, and may exercise authority in any of the several rooms when requested by the teacher in charge of the room. In the absence of the Master for a specified time, the Sub-Master shall assume such part of the Master's duties as may be agreed upon by the Sub-Committee in charge of the school and the Superintendent.

Duties of Sub-
Masters.

SECT. 96. Diplomas of graduation, signed by the Chairman of the Board, the Sub-Committee, and the Master of the school, shall be awarded to those pupils of the graduating class of each Grammar School who, in the opinion of the Master and the Superintendent, have completed the prescribed course of study and whose deportment during the last year has been generally satisfactory. Each Master of a Grammar School one week before the close of the spring term, shall send to the Head-Master of the Latin School, and of the English High School, and to the Superintendent of the Manual Training School respectively a list of the names of the pupils in his school who are candidates for

Diplomas.
§ 106, 116, 123.

Names of can-
didates to be
sent.
§ 105.

admission to these schools; he shall send a copy of these lists to the Superintendent of Schools.

Sessions.
§ 73, 146.

SECT. 97. The sessions shall be from 9 A. M. to 11.45 A. M., and from 2 P. M. to 4 P. M., for the entire school year; except that during the months of November, December, and January the afternoon session shall be from 1.30 to 3.30 o'clock. These hours for opening and closing shall be punctually observed by the teachers.

Physical exercises.

SECT. 98. Midway in each school session five minutes shall be devoted to physical exercises; these shall occur at the same time throughout the building and meanwhile the school-rooms shall be thoroughly ventilated.

Supervision by principals.

SECT. 99. To secure uniformity and efficiency in their management, the schools are committed to the charge of the principals, who, under the direction of the sub-committees, shall hold the assistant teachers responsible for the faithful execution of their plans and wishes.

CHAPTER IX.

Regulations for the Latin School and the English High School.

Classification of pupils.

SECTION 100. The pupils of the Latin School shall be classified in five grades.

SECT. 101. The pupils of the English High School shall be classified in four grades.

Teachers.
§ 46, 51.

SECT. 102. The teachers in each school shall be a Head-Master, a Master, and as many assistants as may be needed.

Secretary and Librarian.
§ 10.

SECT. 103. The Committee on High Schools may appoint a Secretary and Librarian for each of the schools, subject to confirmation by the Board.

Qualifications for admission.

SECT. 104. The qualifications for admission to either school shall be ability to read, write, spell, and define well; a good knowledge of English Grammar; a general knowledge of the History of the United States; a thorough acquaintance with Geography and Arithmetic, and, in general, with all the studies required in the lower schools.

Admission on diploma.
§ 92 96.

SECT. 105. Pupils who have received the diploma of their respective Grammar Schools, certifying that they have completed the prescribed course of study, may be admitted to either school without an exami-

nation. For other persons who desire admission, an examination shall be held at the beginning of the autumn term under the direction of the Committee on High Schools, but pupils may be admitted to advanced standing at any time. No pupil from any class in a Grammar School shall be examined who does not present a satisfactory certificate that he has pursued his studies during the summer vacation. Examination of other applicants. § 74, 86.

SECT. 106. Pupils who have completed the pre-Diplomas. scribed course of study in either school and have sustained a good character shall be entitled to diplomas.

SECT. 107. The sessions shall begin at 8.30 A. M. and shall end at 1.30 P. M.; but the sessions for pupils who take the manual training course shall begin and end at such time as may be agreed upon by the Committee on High Schools and the Trustees of the Manual Training School. Sessions. § 73.

CHAPTER X.

Regulations for the Evening Schools.

SECTION 108. The Evening Schools shall comprise Elementary and Grammar, High, and Drawing Schools. Classification. § 16, 32.

SECT. 109. The term of the Evening Schools shall begin on the second Wednesday of October, and continue every Monday, Wednesday, and Friday evening for fifty evenings. Vacations and holidays shall be the same as in the day schools. Terms and holidays. § 72, 73.

SECT. 110. The sessions of these schools shall begin at half-past seven o'clock and continue until half-past nine o'clock. Sessions.

SECT. 111. Teachers shall be present and the school-room open at least fifteen minutes before the beginning of each session. Before school hours.

SECT. 112. Registration for the Evening Schools, except for the Elementary Department, shall cease on the first day of November. No pupil shall be admitted to any class after that date, except by special permission of the Committee in charge or of the Superintendent. Registration.

SECT. 113. The Principal of each of the Evening Schools shall be responsible for the general management of his school. He shall be in attendance, with two assistants if necessary, the two evenings preceding that on Duties of Principal. § 10, 54, 55.

155. which the term begins, and shall examine applicants and assign them their places. He shall keep a record of the attendance of each pupil; and he shall report the attendance at each session weekly to the Superintendent.
- Admission of pupils.
§ 65. SECT. 114. Adults and children who are unable to attend the day schools may attend the Evening Schools. Any pupil absent three successive sessions shall be discharged, unless his excuse is satisfactory to the Sub-Committee or the Superintendent.
- Number of pupils for a class. SECT. 115. Except in the Elementary Department, no study shall be taken up until at least ten pupils have expressed an intention to take the course and continue it until the end of the term. Any study may be discontinued by the Sub-Committee when the average attendance on that course for two successive weeks falls below ten.
- Diplomas.
§ 16. SECT. 116. Pupils of the Evening High School who have completed satisfactorily the prescribed course may receive diplomas by vote of the Committee on Evening Schools.
- Evening Drawing School.
§ 32, 38. SECT. 117. The Principal of the Evening Drawing School shall be present, with two assistants if necessary, the two evenings immediately preceding that on which the term begins, to receive, examine, and classify applicants for admission.
- Admission of pupils.
§ 65. SECT. 118. All persons over fifteen years of age, who express their intention of attending the entire term, may be admitted. Any pupil absent three successive sessions without a reasonable excuse shall forfeit his right to a seat.
- Subjects taught. SECT. 119. Freehand drawing, mechanical drawing, and modelling shall be taught in the Evening Drawing School; and there shall be a three years' course in each of these departments.
- Three years' course. SECT. 120. Each pupil shall take the prescribed course and pass the required examinations in order to be promoted.
- Promotions. SECT. 121. Pupils who have satisfactorily completed a year's work and passed the required examinations shall receive a written certificate of promotion from the Principal.
- SECT. 122. No pupil shall be admitted to advanced standing without such certificate, except by passing the required examinations.
- Diplomas.
§ 32. SECT. 123. Pupils who have satisfactorily completed the course may receive diplomas by vote of the Committee on Drawing.

CHAPTER XI.

Regulations for the Training School.

SECTION 124. The teachers of this school shall consist of Teachers.
 a Master, three assistants, and as many teachers as the num- § 56.
 ber of pupils shall require; but the cost of instruction per Cost of instruc-
 pupil shall not exceed the average cost of pupils in the other tion.
 Grammar and Primary Schools of the city.

SECT. 125. Graduates of the High Schools, who have also Candidates.
 graduated from one of the State Normal Schools or from § 17, 43, 56.
 the Boston Normal School, and other persons of equal
 attainments may be appointed teachers in this school by the
 Committee on Training School; and such teachers shall Training
 constitute a Training Class. Class.

SECT. 126. The term of service in the training class Term of ser-
 shall be one year; but any teacher in this class may be vice.
 excused or dismissed at any time by the Committee on
 Training School.

SECT. 127. The money compensation to the members of Compensation.
 the training class for their services shall be two hundred
 dollars each for the year. Any money received by them as § 51.
 substitutes shall be used in the payment of their salaries.

SECT. 128. When the interest of the school requires it Second year.
 teachers may be retained for a longer term than one year.

SECT. 129. The Master and assistants shall be respon- Supervision.
 sible for the instruction and management of this school
 under the direction of the Committee on Training School.

SECT. 130. The Committee on Training School may Substitute
 employ six teachers, at a salary not exceeding four hun- teachers.
 dred dollars per annum, to act as substitutes in the Gram-
 mar or Primary Schools, when needed; and when their
 services are not so required, they shall teach in the schools to
 which they may be assigned by the Superintendent. The
 amount received by each of these teachers when acting as
 a substitute shall be deducted from her salary.

CHAPTER XII.

Special Instruction.

Special
instruction.
§ 10.

SECT. 131. Special instruction shall be given in Drawing, Music, and Sewing by instructors employed for that purpose or under their direction.

Instruction in
Drawing.
§ 32, 38, 67.

SECT. 132. Instruction in drawing shall be given in all the schools; in the High Schools by the Director of Drawing, and in the Grammar and Primary Schools by the regular teachers under the direction and supervision of the Director of Drawing.

Instruction in
music.
§ 33, 39, 67.

SECT. 133. Instruction in music shall be given in all the schools; and every pupil who is capable of learning to sing shall be required to give attention to this subject. During the exercise in singing, the teacher of the school shall be present and govern the pupils. Instruction in music shall be given in the Primary Schools and in the lower half of the Grammar Schools by the regular teachers under the supervision of the Director of Music.

Instruction in
sewing.
§ 34, 40.

SECT. 134. Instruction in sewing shall be given in the lower half of the Grammar Schools under the direction of the Committee on Sewing.

CHAPTER XIII.

Duties of the Superintendent.

Election.

SECT. 135. The Superintendent of the Public Schools shall be elected annually, at a meeting of the Board in June, and shall enter upon his duties upon the first day of September following.

Care of
Schools.

SECT. 136. He shall have the care and supervision of the schools under the direction and control of the Board, shall see that its regulations are carried into effect, and shall perform such other duties as the Board from time to time may direct.

Progress of
education.

SECT. 137. He shall acquaint himself with whatever concerns the interest and progress of popular education, in order that all the children in this city may secure the best education practicable.

SECT. 138. He shall devote the principal part of school

hours to visiting the schools for the purpose of obtaining a personal knowledge of their condition, and shall keep regular office hours other than school hours at such place as may be provided.

SECT. 139. He shall advise the teachers as to the best methods of instruction and management, and for this purpose he may hold meetings of the Grammar, and of the Primary teachers, and may dismiss their respective schools at such times as he may deem advisable, not exceeding one day in each term.

SECT. 140. He shall render such aid and communicate such information to the Board and the various committees as they may require.

SECT. 141. He shall inspect the grounds, buildings, furniture, and apparatus belonging to the schools, and report any deficiency in them; and, in general, he shall report anything that is unfavorable to the health and physical development of the pupils.

SECT. 142. He shall make a report to the Board annually, giving an account of the schools, and making such suggestions as he may deem advisable; and this report may be adopted by the Board as its annual report required by statute.

SECT. 143. All reports and communications to the Board shall be made in writing, unless otherwise ordered.

SECT. 144. He shall keep for the inspection of the Board a record of the name, age, and residence of each person applying for the situation of teacher, with such remarks and suggestions as he may deem proper.

SECT. 145. He shall be present at all meetings of the Board, except while the election of Superintendent is under consideration.

SECT. 146. He shall have authority to notify the teachers on stormy days to dispense with either session of the Grammar and Primary Schools and Kindergartens. The signal is five strokes of the fire-alarm repeated once. When given at 8.05 A. M. the morning session of the Grammar and Primary Schools and Kindergartens will be omitted. When given at 12.45 P. M., or at 1.15 P. M., the afternoon session of the Grammar and Primary Schools will be omitted.

CHAPTER XIV.

Truant Officers.

Truant
Officers.
§ 21.

SECTION 147. Truant Officers shall be chosen annually at the regular meeting of the Board in June, and shall enter upon their duties on the first day of September following.

Shall enforce
the statutes.

SECT. 148. They shall enforce, under the direction and control of the Committee on Truant Officers, all statutes of the Commonwealth in relation to truant children, absentees from school, and such children as persistently violate the reasonable rules and regulations of the common schools; shall report to parents all cases of suspension from school; shall conform strictly to these regulations; and shall perform such other duties as the Committee on Truant Officers may direct.

Shall devote
all their time.

SECT. 149. They shall devote all their time to the duties of their office, and shall diligently inquire into every case of truancy, juvenile vagrancy, or unlawful detention from school, whether discovered by themselves or reported to them. They shall prosecute in the name of the city, when so directed by the Committee on Truant Officers, every person having under his control a child between the ages of eight and fourteen years, who neglects or refuses to cause such child to attend some day school at least thirty weeks in each year, excepting only for reasons mentioned in chapter 47, section 1, of the Public Statutes; and, also, all habitual truants, and children between seven and fifteen years of age who may be found wandering about in the streets or public places of this city, having no lawful occupation or business, not attending school, and growing up in ignorance, and such children as persistently violate the reasonable rules and regulations of the common schools.

shall prose-
cute.

Shall visit and
inspect fac-
tories.

SECT. 150. They shall visit and inspect once each month while the public schools are in session all factories, workshops, and mercantile establishments in their respective districts, and ascertain if there is any violation of the public statutes relating to the employment of children therein.

Shall keep
records.

SECT. 151. They shall keep a faithful record of all cases, showing the name, age, and residence of the offender, and the nature of the offence, and make a monthly report in writing of their doings to the Committee on Truant Officers.

SECT. 152. They shall prevent children from loitering ^{Shall prevent loitering.} about the school premises to the annoyance and disturbance of the neighborhood.

SECT. 153. They shall visit each school at least once a ^{Shall visit schools.} day, unless otherwise directed by the Committee on Truant ^{§ 64, 66.} Officers, to receive information in relation to cases described in these regulations.

SECT. 154. They shall assist the teachers in enforcing the ^{Contagious diseases.} regulations of this Board concerning contagious and infectious diseases among the school children. ^{§ 74.}

SECT. 155. Truant Officers may be detailed by the Com- ^{Evening schools.} mittee on Truant Officers to attend the Evening Schools to assist in the preservation of order.

SECT. 156. They shall annually, in the month of May, ^{Census returns.} ascertain the names and ages of all persons between the ages of five and fifteen years, belonging in Cambridge on the first day of May, and make a record thereof in a book provided for this purpose.

AMENDMENTS.

SECT. 3. Committees of three members each : * * * Hy- ^{Amended Feb. 21, 1895.} giene and Physical Culture. The duties of this Committee are defined as follows:—

The Committee on Hygiene and Physical Culture shall con- ^{Adopted as Sect. 34 a.} sider the evils and dangers of school life, and the best means of avoiding and adverting them; and shall make such recommendations to the Board as shall conduce to the physical welfare of the pupils. The special teacher of Physical Training shall, annually, report in writing to this Committee; and shall confer with them from time to time in regard to the work. This Committee shall make a written report to the Board at the meeting in December.

SECT. 18. * * * This Committee shall make a written report ^{Amended Dec. 21, 1893.} to the Board at the December meeting.

SECT. 51. * * * When a teacher is absent from school with- ^{Amended Feb. 21, 1894.} out the permission or approval of the Superintendent, and no substitute is provided, the sum which would be paid to a substitute shall be deducted from the next payment to the absent teacher unless, upon a report from the Committee on Accounts and Estimates, the Board shall otherwise order. The Principal of each school shall notify the Secretary whenever a teacher is absent without a substitute. The teacher known as a special teacher shall not be considered a substitute.

SECT. 74. * * * No pupil who has visited any apartment in ^{Amended Dec. 20, 1894.} which a person is, or within two weeks has been, sick with small-pox, varioloid, diphtheria, or scarlet fever, shall be allowed to attend school until the expiration of two weeks after such visit.

SECT. 87. * * * She shall supervise and direct the work of ^{Amended Nov. 15, 1894.} all the teachers in the school, subject to the approval of the Superintendent of Schools and the special teacher of Primary Schools.

PROVISIONS OF THE PUBLIC STATUTES.

[These extracts are not complete, but contain important information.]

POWERS OF THE SCHOOL COMMITTEE.

The school committee of a town are to determine what is a “sufficient number” of schools for a town to maintain. Chief Justice Shaw uses the following language :—

“There being no specific direction how schools shall be organized ; how many schools shall be kept ; what shall be the qualifications for admission to the schools ; the age at which children may enter ; the age to which they may continue ; — these must all be regulated by the committee, under their power of general superintendence.”

HIGH SCHOOLS.

Every town may, and every town containing five hundred families shall, maintain a high school. Such high school shall be kept for the benefit of all the inhabitants of the town, ten months at least, exclusive of vacations, in each year. — *Pub. Stat., Chap. 44, Sect. 2.*

EVENING HIGH SCHOOLS.

Every city of fifty thousand or more inhabitants shall establish and thereafter annually maintain an evening high school in which shall be taught such branches of learning as the school committee thereof may deem expedient whenever fifty or more residents, fourteen years of age or over, who desire and, in the opinion of the school committee, are competent to pursue high school studies, shall petition in writing for an evening high school, and certify that they desire to attend such school. — *Chap. 236, Acts of 1886.*

EVENING SCHOOLS.

Every town and city having ten thousand or more inhabitants shall establish and maintain evening schools for the instruction of persons over twelve years of age. — *Chap. 174, Acts of 1883.*

INDUSTRIAL AND MECHANICAL DRAWING.

Any town may, and every city and town having more than ten thou-

sand inhabitants shall, annually make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, in either day or evening schools, under the direction of the school committee. — *Pub. Stat. Chap. 44, Sect. 7.*

INDUSTRIAL SCHOOLS.

A town may establish and maintain one or more industrial schools, which shall be under the superintendence of the school committee, who shall employ the teachers, prescribe the arts, trades, and occupations to be taught therein, and have the general control and management thereof; but they shall not expend for any such school an amount exceeding the appropriation specifically made therefor, and shall not compel any scholar to study any trade, art or occupation without the consent of his parents or guardian; and attendance upon such school shall not take the place of the attendance upon public schools required by law. — *Pub. Stat. Chap. 44, Sect. 8.*

APPOINTMENTS OF TEACHERS.

The school committee shall select and contract with the teachers of the public schools; shall require full and satisfactory evidence of the good moral character of all teachers who may be employed; and shall ascertain, by personal examination, their qualifications for teaching, and their capacity for the government of schools — *Pub. Stat., Chap. 44, Sect. 28.*

DISMISSAL OF TEACHERS.

The school committee may, when they think proper, dismiss any teacher from employment, and such teacher shall receive no compensation for services rendered after such dismissal. — *Pub. Stat., Chap. 44, Sect. 30.*

PROVISIONS OF CHAPTER 348, ACTS OF 1888,

As Amended by Acts of 1889 and 1890.

NO CHILD UNDER THIRTEEN TO BE EMPLOYED.

No child under thirteen years of age shall be employed at any time in any factory, workshop, or mercantile establishment.

WHEN CHILDREN UNDER FOURTEEN MAY BE EMPLOYED.

No child under fourteen years of age shall be employed in any factory, workshop, or mercantile establishment, except during the vacation of the public schools in the city or town where he resides, unless the person or corporation employing him procures and keeps on file a certificate and employment ticket for such child.

No child who has been continuously a resident of a city or town since reaching the age of thirteen years, shall be entitled to receive a certificate that he has reached the age of fourteen, unless or until he has

attended school according to law in such city or town for at least thirty weeks since reaching the age of thirteen, unless such child can read at sight and write legibly simple sentences in the English language, or is exempted by law from such attendance.

No child under sixteen can be employed without a certificate of age.

WHO SHALL SIGN CERTIFICATES.

In cities and towns having a superintendent of schools, said certificate shall be signed only by such superintendent, or by some person authorized by him in writing. [The Secretary of the School Committee has been duly authorized by the Superintendent.]

WHO MAY SIGN CERTIFICATES OF AGE.

The certificate as to the birthplace and age of a child shall be signed by his father, if living and a resident of the same city or town ; if not, by his mother ; or, if his mother is not living, or if living is not a resident of the same city or town, by his guardian ; if a child has no father, mother, or guardian living in the same city or town, his own signature to the certificate may be accepted by the person authorized to approve the same.

INSPECTION OF FACTORIES AND WORKSHOPS.

The truant officers may, when so authorized by vote of the School Committee, visit the factories, workshops, mercantile establishments, and other places where children are employed and ascertain whether any children under sixteen years of age are employed contrary to the provisions of the statutes ; and they may demand the names of all such children and may require that the certificates and lists of children provided for by statute shall be produced for their inspection. They shall report any cases of illegal employment to the School Committee and to the chief of the district police or the inspector of factories for the district.

TRUANTS AND DISOBEDIENT PUPILS.

Each town shall make all needful provisions and arrangements concerning habitual truants and children between seven and fifteen years of age who may be found wandering about in the streets or public places therein, having no lawful occupation or business, not attending school, and growing up in ignorance, *and such children as persistently violate the reasonable rules and regulations of the common schools*, and shall make such by-laws as shall be most conducive to the welfare of such children, and to the good order of such town ; and shall provide suitable places for the confinement, discipline, and instruction of such children.

Any minor convicted under a by-law made under section ten of being an habitual truant, or of wandering about in the streets and public places of a city or town, having no lawful employment or business, not attending school, and growing up in ignorance, *or of persistently vio-*

lating the rules and regulations of the common schools, shall be committed to any institution of instruction, or suitable situation provided for the purpose, under the authority of said section or by-law, for a term not exceeding two years. — *Chap. 249, Acts of 1889.*

PENALTY FOR DISTURBING SCHOOLS.

Whoever wilfully interrupts or disturbs a school or other assembly of people met for a lawful purpose shall be punished by imprisonment in the jail not exceeding thirty days, or by fine not exceeding fifty dollars. — *Pub. Stat., Chap. 207, Sect. 23.*

MALICIOUS INJURY TO BUILDINGS.

Whoever wilfully and maliciously or wantonly and without cause, destroys, defaces, mars, or injures a school-house, church, or other building erected or used for purposes of education or religious instruction, or for the general diffusion of knowledge, or an outbuilding, fence, well, or appurtenance of such school-house, church, or other building, or furniture, apparatus, or other property belonging to or connected with such school-house, church, or other building, shall be punished by fine not exceeding five hundred dollars, or by imprisonment in the jail not exceeding one year. — *Pub. Stat., Chap. 203, Sec. 78.*

INJURY TO LIBRARIES.

Whoever wilfully and maliciously or wantonly and without cause writes upon, injures, defaces, tears, or destroys a book, plate, picture, engraving, or statue, belonging to a law, town, city, or other public library, shall be punished by fine of not less than five, nor more than fifty dollars, or by imprisonment in the jail not exceeding six months. — *Pub. Stat., Chap. 203, Sec. 79.*

NO LIQUOR TO BE SOLD WITHIN FOUR HUNDRED FEET OF A SCHOOL BUILDING.

No license of the first, second, or third class, under the provisions of chapter one hundred of the Public Statutes, shall be granted for the sale of intoxicating liquors in any building or place on the same street within four hundred feet of any building occupied in whole or in part by a public school. — *Chap. 220, Acts of 1882.*

PATRIOTIC EXERCISES.

An act of the Legislature approved March 21, 1890, provides as follows: —

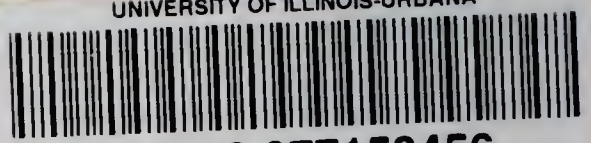
SECTION 1. In all the Public Schools of the Commonwealth the last regular session prior to Memorial Day, or a portion thereof, shall be devoted to exercises of a patriotic nature.

SECT. 2. This act shall take effect upon its passage.

ENGLISH HIGH SCHOOL BUILDING.

The plan and description of the English High School building will be mailed to the address of any person who sends a request for the same to the office of the Superintendent of Schools, Cambridgeport, Mass.

UNIVERSITY OF ILLINOIS-URBANA



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